WARNER ROBINS AREA TRANSPORTATION STUDY (WRATS)

2040 Long Range Transportation Plan

Prepared by :

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Warner Robins Area Transportation Study (WRATS) the Metropolitan Planning Organization for the Warner Robins, Georgia region – Long Range Transportation Plan (LRTP) as required by MAP-21 and USDOT FHWA under 23 CFR Parts 450 and 500 and FTA under CFR Part 613.

This document is prepared in cooperation with the Georgia Department of Transportation, the Federal Highway Administration and Federal Transit Administration

Disclaimer

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Further, WRATS incorporates the principles of environmental justice into its policies, planning and project development activities to ensure that there are no disproportionately high and adverse inequitable impacts on minority groups and low-income groups throughout the region.

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(WRATS)
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1. Mr. Randy Toms, Mayor
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3. Mr. Russell McMurry
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4. Mr. Tommy Stalnaker, Chairman
   Houston County Commissioners

5. Mr. Melvin Walker, Chairman
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6. Mr. William Douglas
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(WRATS)
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    Georgia Advocacy Member

LIST OF ACRONYMS AND ABBREVIATIONS

CAC = Citizens Advisory Committee
CST = Construction
DRI = Development of Regional Impact
EJ = Environmental Justice
FHWA = Federal Highway Administration
FTA = Federal Transit Administration
GDOT = Georgia Department of Transportation
ITS = Intelligent Transportation Systems
LOS = Level Of Service
LRTP = Long Range Transportation Plan
MAP-21 = Moving Ahead for Progress in the 21st Century
MGRC = Middle Georgia Regional Commission
MPO = Metropolitan Planning Organization
NEPA = National Environmental Policy Act
NHTSA = National Highway Transportation Safety Administration
PBPP = Performance Based Planning and Programming
PC = Policy Committee
PE = Preliminary Engineering
ROW = Right-of-Way
SPLOST = Special Purpose Local Option Sales Tax
SRS = Shoulder Rumble Strips
STIP = State Transportation Improvement Program
TAZ = Traffic Analysis Zone
TCC = Technical Coordinating Committee
TDM = Travel Demand Management
TIP = Transportation Improvement Program
TMA = Transportation Management Association
TSM = Transportation Systems Management
USDOT = United States Department of Transportation
UVC = Uniform Vehicle Code
V/C = Volume to Capacity Ratio
VHD = Vehicle Hours of Delay
VMT = Vehicle Miles of Travel
YOE = Year of Expenditure

1 Introduction

1.1 History of WRATS

The purpose of the Warner Robins Area Transportation Study (WRATS) is to ensure that federal-aid transportation projects are planned in a continuous, coordinated and comprehensive manner. WRATS is the designated Metropolitan Planning Organization (MPO) for a study area that includes the existing urbanized area for the Cities of Warner Robins, Perry, Byron, Centerville, Robins Air Force Base, the remaining portion of Houston County and the eastern portion of Peach County along Interstate 75. This area covers the urbanized area as well as the area that is expected to become urbanized over the next 20 years.

The WRATS planning process was mandated by the 1962 Highway Act which requires that a transportation planning process be established in all metropolitan areas with a population greater than 50,000. With the completion of the 1980 US Census, Warner Robins was officially designated as an urbanized area. Before federal funds can be expended on a project in the WRATS study area, the project must be included in the WRATS planning process. The WRATS MPO is composed of elected, appointed, and advisory officials from the federal, state and local levels.

1.2 WRATS Study Area

The WRATS was formed in 1983 with the initial participation of the cities of Centerville and Warner Robins, Houston and Peach Counties, the Georgia Department of Transportation, and Robins Air Force Base. The study area encompassed approximately 81,662 acres, or 127.6 square miles.

The 2000 Census revealed a significant expansion of the urbanized area boundary due to the substantial growth that took place during the 1990s. This, coupled with the expectation that the Warner Robins urbanized area would continue to expand both south and west over the next 20 years, the WRATS Policy Committee approved a new study area boundary that includes the cities of Perry and Byron, the remainder of unincorporated Houston County to the county line, and additional unincorporated areas in Peach County near Byron. This study area was revised slightly after the 2010 Census to include additional land in unincorporated Peach County to the northwest of Perry including the Perry-Houston County Airport. The revised Study Area now totals approximately 270,734 acres, or 423 square miles. Figure 1.1 illustrates the current Study Area boundary as used in this plan.

For purposes of transportation planning and for displaying the existing and projected socio-economic characteristics, the Study Area was divided into traffic analysis zones (TAZs). The original Study Area encompassed a total of 127 TAZs. Using Census geography and a methodology established by the Georgia Department of Transportation (GDOT), TAZs were added and the WRATS study area incorporated a total of 248 TAZs for the 2030 LRTP. The TAZs were further refined for developing the 2035 and 2040 LRTP so that there are now 331 TAZs. Figure 1.2 shows the current TAZ boundaries as used in this plan.

1.3 Planning Process

The metropolitan transportation planning process in an urban area such as Warner Robins is fairly standardized. The process involves the coordination of the improvements for all modes of transportation including highways, bridges, transit, bicycles, pedestrians, airports, highway and rail freight movement, Intelligent Transportation Systems, and transportation system enhancements. Transportation planning in an MPO area is required by the Federal Highway

Administration in order to qualify for funding of preliminary engineering, right of way purchase, and construction of projects from the Highway Trust Fund or other federal transportation resources.

As shown in Figure 1.3 the LRTP process begins with existing and future land use, existing and future socioeconomic data and the existing transportation network for the WRATS area. Basically, the end result is to develop the future transportation network and assumptions about future growth and development that drive travel demand and transportation needs. The 2040 LRTP uses the same Goals and Objectives developed for the 2035 LRTP. These goals and objectives led to performance measures used in the modeling process to determine the effectiveness of proposed transportation improvements. The goals and objectives will be further discussed in section 2. The modeling process is documented in Appendix A.

From the modeling process, transportation needs were identified.[1] These needs were broken down and defined for six different areas including:

- Roads and Bridges
- Public Transportation
- Bicycles and Pedestrians
- Other Modes
- Freight and Goods Movement
- Operations and Maintenance

From the needs analysis, a list of improvements was produced to address the deficiencies identified. Costs were estimated for each improvement project and compared to the projected funding available during the time frame of this plan. Plan recommendations were then developed for short-term, mid-term and long-term improvement projects. The plan recommendations are shown in section 7.

1.4 WRATS Transportation Public Involvement Process

Paramount to the development of an effective LRTP is a sound public involvement process. Public Meetings were held to discuss the existing 2035 LRTP and plan goals, and during a public review period to present the 2040 draft plan recommendations. The flyers used to advertise the public involvement meetings, the environmental justice analysis used to determine locations for these meetings, and all comments received from these meetings are found in Appendix B. In addition to public involvement meetings, a series of Stakeholder Interviews were conducted and an on-line Transportation Issues Survey was developed and implemented.

The purpose of the Stakeholder Interviews was to get broad input on transportation and development issues in the region from organizations who could provide unique and divergent perspectives and engage them in development of the plan. Ten organizations participated in the Stakeholder Interviews. The Stakeholder Interviews are summarized in Appendix G. In brief,

[1] Only road improvement projects are identified during the modeling process. Other transportation needs were drawn from WRATS staff, WRATS Committees, public comment, Stakeholder Interviews, the Transportation Issues Survey, and published documents.

Stakeholders when asked the most important issues to be addressed in the LRTP indicated that transit and new roads or additional capacity on roads were their first or second priority, while improved operations and safety of roads and additional bicycle and pedestrian facilities tended to be their third priority.

The Transportation Issues Survey solicited information on transportation issues directly from Warner Robins region residents and provided them an opportunity to express their concerns about the current transportation system and what improvements to the regional transportation system that they would like to see implemented. The survey was publicized on the City of Warner Robins website, in the Macon Telegraph, and the Robins Rev-Up. There were over five hundred survey respondents. The Transportation Issues Survey is summarized in Appendix H. In brief, respondents to the survey tended to identify lack of transit, lack of sidewalks, and lack of bike lanes and multi-use paths as the most important transportation problems in the region.

Federal transportation planning rules require that all urbanized areas such as Warner Robins have written guidelines incorporating citizen participation into the planning process. The WRATS Public Participation Plan was recently updated to be consistent with MAP-21 requirements.

Figure 1.1: Current WRATS Study Area

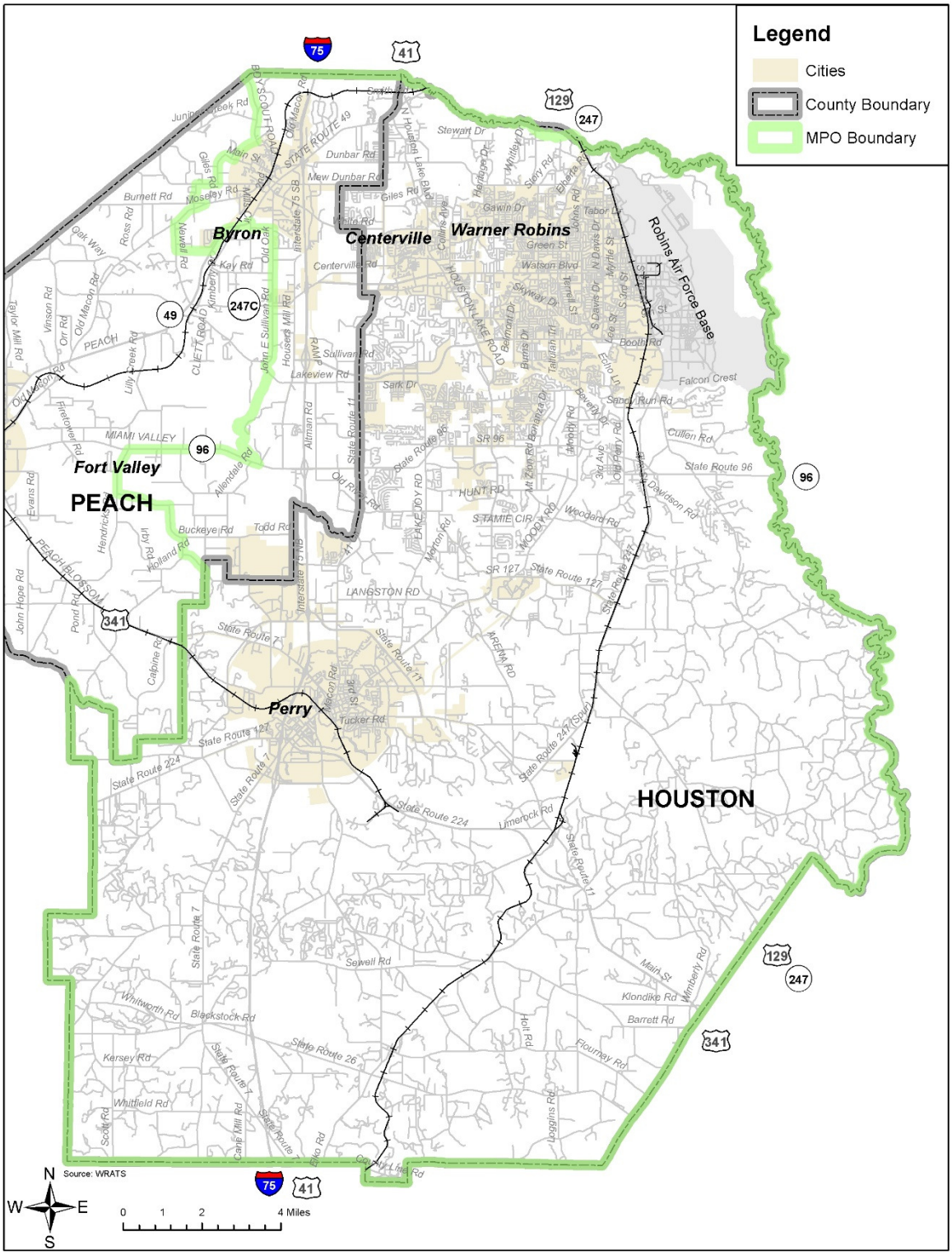
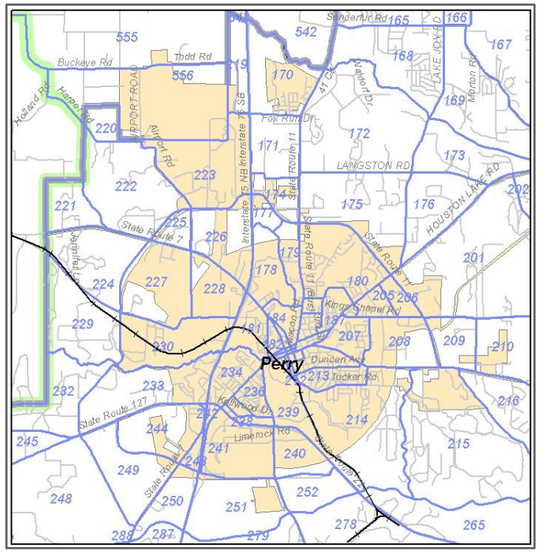
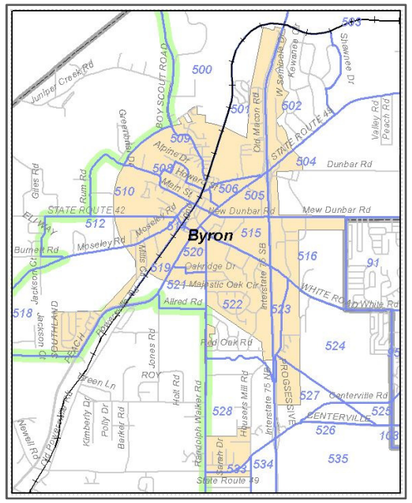


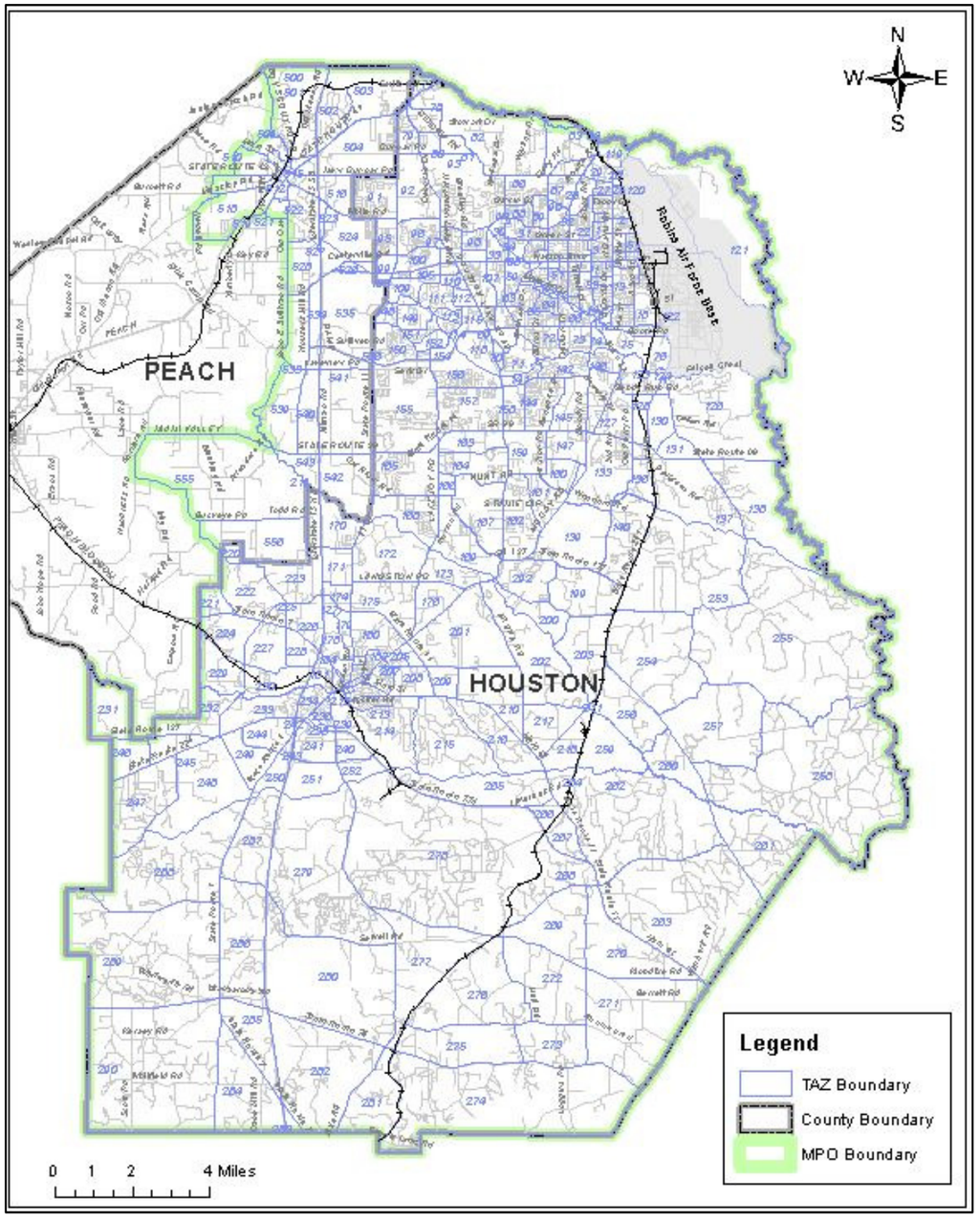
Figure 1.2: WRATS Traffic Analysis Zone Boundaries

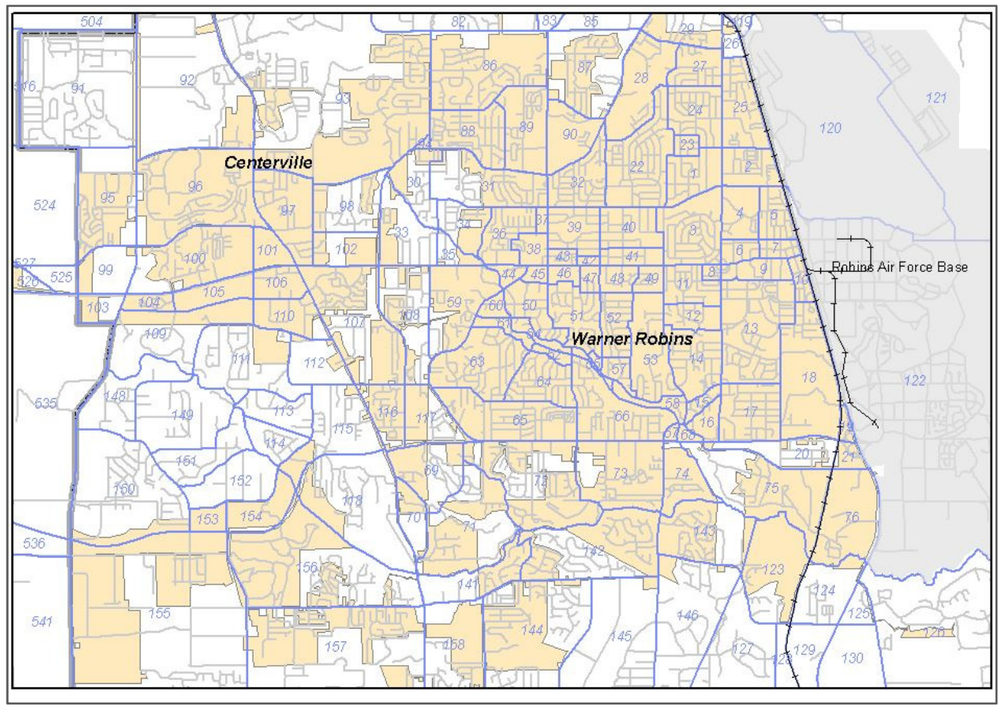


City of Perry Detail



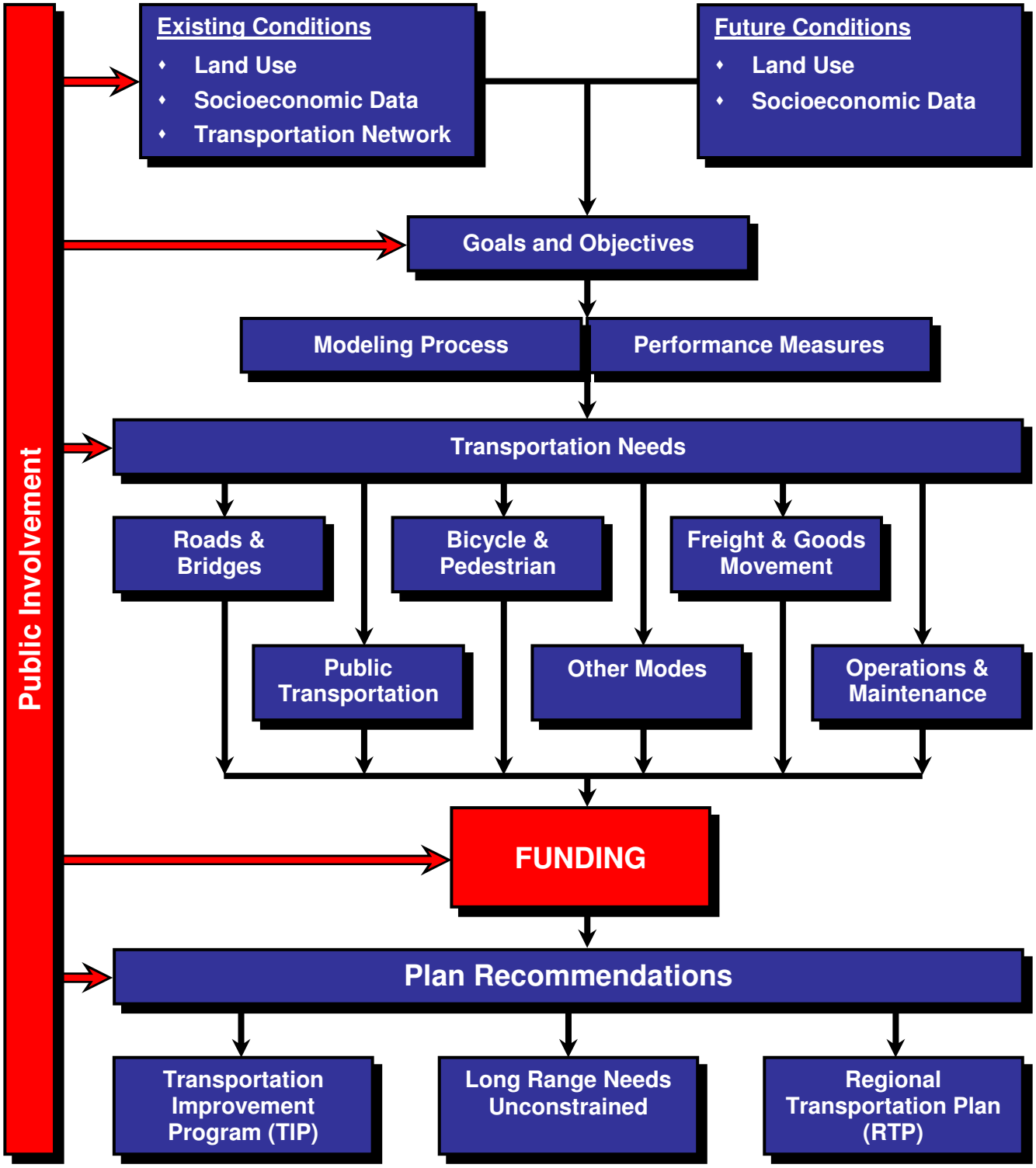
City of Byron Detail





City of Warner Robins and Centerville Detail

Figure 1.3: The Long Range Transportation Plan Development Process



Public involvement in transportation planning has been required since the passage of ISTEA in 1991. Federal regulations to implement ISTEA called for a proactive citizen participation process. This regulation has continued in each successive federal transportation act including Moving Ahead for Progress in the 21st Century Act (MAP-21) the current federal transportation legislation. The public involvement process must also comply with the Civil Rights Act of 1964 and the Americans with Disabilities Act of 1990. The public involvement process is intended to provide a framework through which the citizens of the community can participate in an advisory capacity in the planning and programming of transportation improvements.

1.4.1 Process Design

The MPO staff is responsible for developing a detailed schedule of individual transportation plans and program deadlines for the fiscal year. The schedule includes such dates as: estimated completion dates, public notices, committee meetings, outreach activities, key decision points and when reference material or educational tools are needed.

1.4.2 Process Initiation

Media Campaign

The MPO staff uses local media sources to provide clear and timely information about transportation issues and processes to citizens and any other interested parties and segments of the community affected by transportation plans, programs and projects. The MPO staff can use the media to inform the public by writing and distributing press releases, public service announcements, public access TV, talk radio, speaking engagements, and/or public notice advertisements. Notice of public meetings was advertised in the Houston Home Journal, public meetings and the transportation issues survey availability were mentioned in the Macon Telegraph website, the City of Warner Robins Facebook, in email newsletters to students at Georgia Military College and Middle Georgia Technical College, and in the Robins Rev-up.

Citizen Resource List

The staff is responsible for directly contacting known interested parties and identifying other persons or groups who are interested in the transportation planning process, plans or programs. Every effort is made to reach and accommodate hard-to-reach audiences such as persons with disabilities, non-English speaking citizens, and those with other special needs who are traditionally underserved by existing transportation systems.

Background Information

The MPO staff gathers and makes available any pertinent background information or materials. The information is made available through the established media, citizen and special groups network. It is an ongoing challenge to put technical issues in terms that are understandable and interesting to the general public. The MPO is committed to continue to simplify its documents, including or referring to background information, summaries of the information contained, and the goals and policies of the transportation plans or programs.

1.4.3 Process Implementation

Citizens Advisory Committee

The Citizens Advisory Committee (CAC) consists of individuals who provide a broad representation of the community. The function of this committee is to inform and advise the

community of the process, recommendations and results of the Warner Robins Area Transportation Study and to offer any suggestions which would benefit the Study. The CAC also advises the MPO and Policy Committee on matters of public opinion from individual citizens and citizen groups regarding transportation plans and programs. The CAC will be utilized to the fullest extent possible in the outreach activities of informing their counterparts of any transportation plans, programs, and projects.

Information Dissemination

Appropriate transportation planning documents are made available at central locations such as public libraries, chambers of commerce, city and county departments of planning, Georgia Department of Transportation field offices, and/or Regional Commissions, and on the WRATS webpages. Typically, these documents include draft plans or programs which are to be reviewed by the public prior to the WRATS Policy Committee's final adoption. A similar procedure is used to make final plans or programs, or amendments thereto, available for information purposes. Additionally, copies of draft and final plans or programs will be mailed directly to individuals upon request.

Public Notice/Review Period Guidelines

Public notices are placed in local newspapers, prior to all public review periods. Public review periods for draft plans and programs run at least 30 days. If the Policy Committee determines that the final plan or program differs significantly from the one which was made available for public comment, and raises new material issues which interested parties could not reasonably have foreseen from the public involvement efforts, an additional 15 days for public comment on the revised plan or program shall be made available.

If the Policy Committee determines it necessary to amend the final plan or program, the Policy Committee may approve the proposed amendment(s) subject to a 15 day public review and comment period. If no significant comments are received, the amendment(s) will stand as approved with no further action required by the Policy Committee. Results of the public review and comment period will be provided to the Policy Committee, for their information, at the next regularly scheduled meeting. If comments are received which the MPO staff considers as potentially significant, the comments will be presented to the Policy Committee for consideration and appropriate action.

1.4.4 Process Conclusion

When significant written and oral comments are received on the draft transportation plan or program, as a result of the public involvement process, a summary, analysis or report on the content of comments and the MPO responses, is prepared and made part of the final document, which is available at central locations and via the internet. This summary report is then distributed throughout the established network of committees and to individual commenters.

Plan and/or program amendments and the resulting public comments, will be made part of the Policy Committee minutes and will be kept on file in the MPO office. Amendments and comments also will be incorporated into copies of the affected plans and programs, made available at central locations.

1.4.5 Process Review

The public involvement process shall be periodically reviewed by the MPO and the Federal Highway Administration in terms of its effectiveness in assuring that the process provides full

and open access to all persons. The process will be evaluated and refined by following up with the established network and involved citizens for any suggestions on improvement. The preceding public involvement process will be repeated and refined as necessary during the course of the WRATS transportation planning process.

1.4.6 Committees

As a result of many organizational meetings, three committees were formed and participants identified. The Policy Committee (PC) is responsible for establishment of policy and overall guidance for the Study. The PC is required per federal regulations governing MPOs and its members are elected and appointed officials. Voting members are policy level representatives from Warner Robins, Centerville, Byron, Perry, Robins AFB, Houston County, Peach County, and Georgia DOT and the Chairman of the Citizens Advisory Committee. Recently WRATS added a representative from the Middle Georgia Regional Commission to act as a representative for transit. The Federal Highway Administration (FHWA) is represented in a non-voting capacity.

The Technical Coordinating Committee (TCC) is comprised of individuals whose special skills and training are necessary to undertake development of a comprehensive transportation planning process. Voting members are technical positions representing the same entities listed above in the Policy Committee, plus the Middle Georgia Regional Commission (formerly the Middle Georgia Regional Development Center), the Houston County Board of Education, and the Perry-Houston County Airport. Non-voting members are representatives from the Federal Highway Administration, Trucking Association, Railroad, Federal Transit Administration, Citizens Advisory Committee, and the private sector.

Currently, most transportation planning documents and items to be considered by the WRATS Policy Committee, are first reviewed by the Technical Coordinating Committee (TCC) and then by the Citizens Advisory Committee (CAC). The full Policy Committee (PC) is the policy making body of the Metropolitan Planning Organization and the Chairman of the CAC is also a voting member of the PC. A citizen may at any time attend and participate in the TCC, CAC or PC meetings.

Regularly Scheduled Committee Meetings

The time, place, and date of regularly scheduled meetings will be posted in the Warner Robins City Hall, Centerville City Hall, and the Houston County Annex building. The Policy Committee rotates meeting locations and also has meetings in the Byron Municipal Complex Training & Conference Center.

Special Called Committee Meetings

The Chairman of each committee may call a special meeting provided that a notice of the time, place, and date of the meeting is posted twenty-four hours in advance of said meeting. The written notice for the special called meeting will be in the same manner as for the regularly scheduled meeting.

Agendas and Minutes

Agendas for each committee will be available to the committee members and general public no later than one week prior to each regularly scheduled committee meeting. The minutes of each committee meeting will be available at the next regularly scheduled meeting.

All elements of this public involvement process will be implemented as personnel and monetary resources allow. Many of these activities will be ongoing throughout the year, while others will occur on an "as needed" basis. With each planning activity, the input of the public will be encouraged from the earliest point possible.

2 Goals, Objectives, Performance Measures and Strategies

Development of the 2040 Long Range Transportation Plan was guided by a set of goals, objectives and strategies. The major focus in developing the goals was to ensure that the 2040 LRTP addresses the needs of all transportation modes in a manner which supports local community goals and aspirations, and complies with the latest federal requirements relating to MAP-21, the current federal surface transportation legislation.

The Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998, established seven planning factors which MPOs must consider in the formulation of transportation plans and programs. SAFETEA-LU, enacted in 2005, revised this to eight planning factors by splitting the goal supporting increased safety and security of the transportation system for all users into two goals; one supporting safety and the other supporting security. MAP-21 continues to emphasize these eight planning factors in the metropolitan planning process:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;

2. Increase the safety of the transportation system for motorized and non-motorized users;

3. Increase the security of the transportation system for motorized and non-motorized users;

4. Increase the accessibility and mobility options available to people and for freight;

5. Protect and enhance the environment, promote energy conservation, and improve quality of life;

6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;

7. Promote efficient system management and operation; and

8. Emphasize the preservation of the existing transportation system.

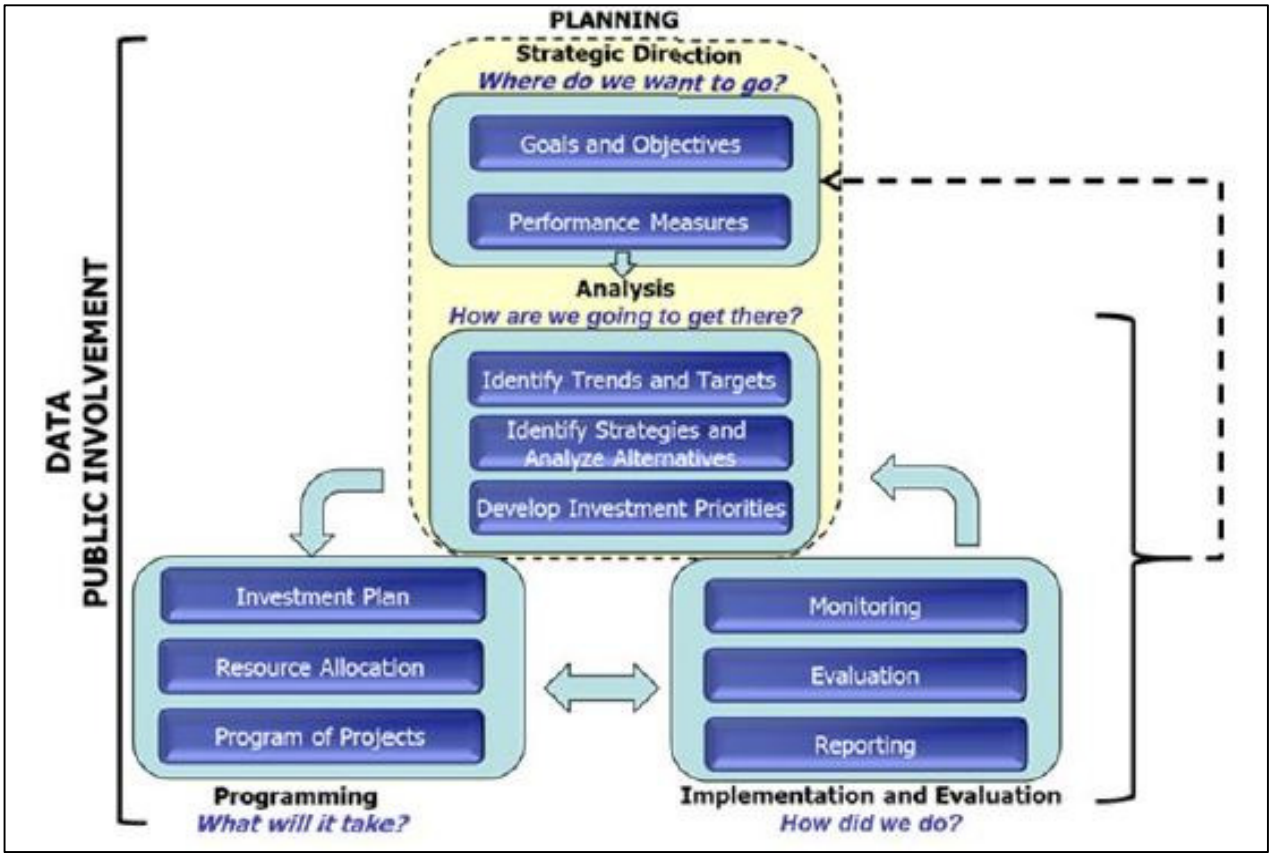
A series of two public involvement meetings were held using the planning factors as the basis to formulate a set of goals and objectives to guide the 2040 LRTP. In addition, a WRATS Transportation Issues Survey was conducted on-line. The survey generated over 500 responses. The goals and objectives developed from these meetings, and the survey response, lent themselves to performance criteria used in the evaluation and prioritization of transportation projects for the LRTP.

2.1 USDOT Implementation of MAP-21 Performance Provisions

The Performance Based Planning Systems envisioned by MAP-21 and the associated MPO Planning Rule will be addressed as GDOT in cooperation with Georgia MPOs establishes transportation performance measures and targets for use in future plans, and as associated programming processes are developed within the next couple of years. These changes are currently in process in response to Notices of Proposed Rule Making (NPRM) finalized in late 2014 and early 2015 that address National MAP-21 Transportation Performance Goals.

These NPRMs, including the associated Metropolitan and Statewide Planning Rule, will affect future LRTPs and TIPs once fully integrated into the transportation planning process. The Georgia Statewide Strategic Transportation Plan, prepared by GDOT in 2013, contains state transportation goals, objectives and performance measures that may be used as a basis for determining appropriate performance measures under the newer National MAP-21 Transportation Performance Goal NPRMs. Figure 2.1 shows the Performance Based Planning Process envisioned by USDOT for metropolitan transportation planning and programming processes as a flow diagram. Note that the expectation is that goals and objectives will have performance measures, that analysis will help establish targets for performance measures, and strategies and investment priorities to achieve these targets. Further the process requires tracking and reassessment over time; essentially a feedback loop, to determine progress in achieving goals and objectives and potentially to change the emphasis of investment priorities over time.

Figure 2.1: USDOT Performance Based Planning Process



Source: USDOT

This LRTP begins to collect and examine data in anticipation of the future performance measures, as documented by the Existing Transportation Systems Conditions in Appendix E. Appendix E contains data on existing traffic volumes, roadway level of service, truck speeds on Interstate 75, crash fatalities and injuries, location of railroad crossings and predicted collisions at at-grade railroad crossings. Although this begins to establish baseline performance for some aspects of the regional transportation system, additional data will need to be compiled, generated, or collected and analyzed to allow a more complete assessment.

The seven national performance goals for Federal transportation programs established in MAP-21 are:

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System
- **System Reliability** - To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced Project Delivery Delays** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

These seven national MAP-21 transportation goals generally overlap the eight planning factors of the MPO planning process, with the exception of reduced project delivery delays, and are reflected in the goals and objectives of the WRATS 2040 LRTP.

2.2 Goal 1 – Economic Vitality

The regional transportation system has pervasive impact on the economic vitality of the region by impacting the delivery of goods and services, the accessibility of essential goods and services to residents, and the mobility of people within, to, from and through the region. The LRTP emphasizes the importance of transportation to the region's economic vitality.

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency

Objectives

- Minimize work trip congestion delay
- increase the efficiency in the movement of goods and services

Performance Measures

- Work Trip VMT
- Vehicle Hours of Delay (VHD)
- Lane Miles of LOS E or LOS F

2.3 Goal 2 – Safety and Security

The overall safety and security of the region's transportation system protects the public and ensures the ability of the transportation system to operate effectively on an ongoing basis and in times of regional emergencies.

Increase the safety and security of the transportation system for motorized and non-motorized user[2]

Objectives

- Ensure all transportation systems are structurally and operationally safe and secure
- Minimize frequency and severity of vehicular accidents
- Improve, eliminate, or consolidate at-grade rail crossings
- Promote continuity with applicable State and Local Emergency Preparedness Plans

Performance Measures

- Total accidents per hundred million vehicle miles traveled
- Injury accidents per hundred million vehicle miles traveled
- Fatal accidents per hundred million vehicle miles traveled
- Reduction in bicycle and pedestrian fatalities
- Number of projects that promote regional transportation security and emergency preparedness

2.4 Goal 3 – Accessibility, Mobility and Connectivity

Accessibility, mobility and connectivity are the main functions of a transportation system. Increasing the accessibility, mobility, and connectivity of the transportation system is vital to the regions ability to sustain development, to compete with other regions, and provide residents with effective transportation options.

Increase the accessibility and mobility options available to people and for freight and enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

Objectives

- Minimize congestion delays
- Maximize regional population and employment accessibility
- Provide efficient and reliable freight corridors
- Encourage transportation services for the transportation disadvantaged
- Encourage use of non-motorized modes

Performance Measures

- Volume/Capacity (V/C) ratio
- Number of bike/pedestrian corridors
- Transit Vehicle Revenue Hours

[2] Specific information on Safety and Security can be found in Appendix E which contains information on road crashes and fatalities and F which describes linkages between the LRTP and the State Highway Safety Plan.

- Truck Miles Traveled at LOS E or LOS F

2.5 Goal 4 – Environment and Quality of Life

To ensure sustainability of regional development and the health and well-being of the regions residents, the LRTP seeks to maintain or improve the natural and built environment while providing effective transportation alternatives.

Protect and enhance the environment, promote energy conservation, and improve quality of life

Objectives

- Protect wetlands, historic resources, neighborhoods, recreational facilities and other important resources
- Support infill development
- Provide access to essential services

Performance Measures

- Impacts on the natural environment
- Impacts on historical and cultural resources
- Accessibility

2.6 Goal 5 – Management and Preservation of the Existing System

Management and preservation of the existing transportation system ensures efficient use of public funds and ensuring the quality and operational capability of the region's transportation assets.

Promote efficient system management and operation and emphasize the preservation of the existing transportation system

Objectives

- Require improvements necessary to accommodate future growth in the development review process
- Review all development proposals for transportation impacts
- Maximize the efficiency of signalized intersections
- Expand use of Intelligent Transportation Systems (ITS)
- Maintain existing transportation system

Performance Measures

- Average Daily Traffic (ADT)/lane
- Operational improvement
- Pavement Condition
- Bridge Condition

It should be noted that the objectives of many goals overlap and that objectives for one goal may reinforce another goal. For example the objective to encourage transportation services for the transportation disadvantaged under the goal Accessibility, Mobility, and Connectivity would support the objective to provide access to essential services under the goal Environment and Quality of Life.

Table 2.1: WRATS 2040 LRTP Goals and Relation to MAP-21 MPO LRTP Planning Factors

LRTP Goals	MPO LRTP Planning Factors
Economic Vitality	• Support the economic vitality of the metropolitan area • Promote efficient system management and operations
Safety and Security	• Increase the safety of the transportation system • Increase the security of the transportation system
Accessibility, Mobility and Connectivity	• Increase the accessibility and mobility options available for people and freight • Enhance the integration and connectivity of the transportation system across and between modes
Environment and Quality of Life	• Protect and enhance the environment, promote energy conservation, and improve quality of life
Management and Preservation of the Existing System	• Emphasize preservation of the existing transportation system

Table 2.1 shows the relationship between the WRATS 2040 LRTP goals and the MAP-21 MPO LRTP planning factors. As can be seen, there is generally a direct relationship between the MPO planning factors and the LRTP goals. This indicates that the LRTP addresses the MAP-21 MPO LRTP planning factors.

2.7 Strategies

A number of strategies have been developed to enable WRATS to achieve the stated objectives of the plan. These strategies constitute actions that will help to accomplish the LRTP goals.

- Monitor transportation systems operations by identifying/collecting data to ensure efficiency and effectiveness.
- Promote operational strategies and ITS measures that resolve congestion before adding new capacity.
- Encourage development of pedestrian and bicycle connectivity as part of development regulations and development review processes.
- Continue to engage local jurisdictions and stakeholders on development of public transit.
- Identify needed infrastructure for and operational constraints on freight movement to support economic vitality of the region.
- Participate in development of new joint comprehensive plans for Houston and Peach Counties to ensure appropriate transportation policy measures.
- Maintain a safe and secure transportation system by engaging in regional emergency preparedness discussions and plans.
- Consider and periodically report on the mobility and access needs of the transportation disadvantaged community.
- Monitor and assess new transportation technologies for application in the region.

- Continuously solicit public involvement on transportation and development issues using announcements/postings on WRATS website.

These strategies were included in the public involvement materials presented at the public open house meetings held on the Draft WRATS 2040 LRTP on October 1, 2015.

3 Socioeconomic Data

The socioeconomic data is a set of demographic characteristics of the study area used to project trips made on the transportation network. Sociodemographic projections are used in conjunction with the WRATS regional travel demand model. The Model Development Methodology for the WRATS travel demand model can be found in Appendix A. For the modeling purposes of a LRTP, the socioeconomic data was collected for population, occupied households, employment, average household income and school enrollment for each transportation analysis zone (TAZ). Employment was then broken into four different types: retail, service, manufacturing and wholesale. These four generalized types of employment are used since they each generate different trip patterns for employees, customers and inbound and outbound deliveries.

The socioeconomic data used in the modeling process is adjusted in certain circumstances to better reflect the trip patterns in a particular TAZ. For example, a hospital may have a large population, but the people staying at the hospital are not making a daily work trip. In this example, the employment associated with the hospital will generate the additional trips for visitors and other service related trips. A complete list of the base year socioeconomic data can be found in Appendix C. (Note: Although Appendix C provides socioeconomic data for all 630 TAZs in Peach and Houston Counties, only the 331 TAZs within the WRATS MPO boundary are used to assess current and future travel demand.)

3.1 Base Year

The base socioeconomic data was compiled for the year 2010 to correspond to the base transportation network used in the modeling process. Base year population and employment estimates were created by WRATS in conjunction with the Middle Georgia Regional Commission (MGRC).

3.1.1 Occupied Units and Population

Occupied units and population data was obtained by reviewing 2010 building permit files. These files provided information on all single-family units, duplexes and multi-family dwellings where available. After the building permit information was obtained, the specific location of each dwelling was established using an automated mapping system. Next, this map was combined with the TAZ map to assign each dwelling to a corresponding TAZ. Dwelling units were then summarized for each TAZ. Once the number of dwellings in each TAZ was identified, the vacancy rate was applied producing the number of occupied units for the TAZ. Population was projected for each TAZ by multiplying the occupied units by the estimated 2010 population per household ratio.

3.1.2 Employment

Base year employment data was estimated using the business license files provided by the various local governments. This information included the name of the business, business location, the number of employees and the business type. To ensure the legitimacy of this data, special attention was given to locations where it was known that a new business opened or an existing business closed. The Peach County and Houston County Boards of Education also provided employment for area schools. The type of business (retail, service, manufacturing and wholesale) was identified and finally, the information was summarized for each TAZ.

3.1.3 School Enrollment

School enrollment data was gathered by contacting the Peach County and Houston County Boards of Education. The Boards of Education provided the 2009-10 school enrollments the schools in their jurisdiction located within the WRATS Study Area.

3.2 Area Wide Projections

Table 3.1 shows socioeconomic data used in updating the 2040 Transportation Plan for the Warner Robins Area Transportation Study (WRATS). Future year 2040 sociodemographic data was prepared by WRATS in accordance with the GDOT Socioeconomic Data Development Methodology (Appendix D). These projections were used to allocate 2040 socioeconomic data to the various traffic analysis zones (TAZs). These projections are consistent with other demographic forecasts used in Houston and Peach Counties, such as those used in the updating of Comprehensive Plans. These projections describe the level of human activity that Houston and Peach County governments intend to support in the future.

Table 3.1: Future Year Socioeconomic Data Control Totals

Socioeconomic Variable	Area	Base Year 2010	Future Year 2040	Cumulative % Change 2010 to 2040	Avg. Annual % Change 2010 to 2040
Population	Houston County	139,900	221,242	58.1%	1.9%
	Peach County	27,695	44,473	60.6%	2.0%
	Peach Co. (portion)	9,582	15,387	60.6%	2.0%
	WRATS Study Area	149,482	236,629	58.3%	1.9%
Households	Houston County	51,728	84,444	63.2%	2.1%
	Peach County	9,394	16,952	80.5%	2.7%
	Peach Co. (portion)	3,250	5,865	80.5%	2.7%
	WRATS Study Area	54,978	90,309	64.3%	2.1%
Total Employment	Houston County	63,484	106,130	67.2%	2.2%
	Peach County	7,690	14,180	84.4%	2.8%
	Peach Co. (portion)	2,147	6,256	191.4%	6.4%
	WRATS Study Area	65,631	112,386	71.2%	2.4%

Base Year 2010 control totals, cumulative percentage changes and average annual percentage changes are also shown in Table 3.1. Population forecasts are based on projections of

decennial census population from 1970 to 2010 and census estimated population for 2011 and 2012. They are generally consistent with, though slightly higher than, projections made from the Georgia Department of Community Affairs website and the Governor's Office of Planning and Budget. Total Employment was forecast by projecting annual Georgia Department of Labor estimates from 1990 through 2012.

As soon as the area wide control totals were adopted, the process of allocating the future year 2040 population, household and total employment into the Traffic Analysis Zones (TAZs) began. There are 331 TAZs in the study area, 292 in Houston County and 39 in Peach County[2]. There is a small portion of the City of Perry that lies within Peach County which is now included in the WRATS Study Area after a minor change to the MPO planning boundary after the 2010 census. This area includes the Perry-Houston County Airport.

3.3 Growth Allocations

A copy of the WRATS 2040 Socioeconomic Data allocated to the individual TAZs is shown in Appendix C. The original projections for employment in the area were adjusted in order to account for a slower growth rate for the Robins Air Force Base (RAFB) as compared to the rest of Houston County. Employment at RAFB was assumed to grow by approximately 20% over the WRATS LRTP study period – less than half the rate of overall employment growth.

Table 3.2 shows the final numbers for population, households and total employment. This table also includes the corresponding totals for the draft socioeconomic data presented with this document.

Table 3.2: Future Year Socioeconomic Data Population Totals

	2040 Population	2040 Households	2040 Total Employment	2040 School Enrollment
Houston County	221,242	84,444	106,131	56,762
Peach County (portion)	15,387	5,866	6,257	1,945
Total for WRATS Area	236,629	90,310	112,388	58,707

Employment was further broken down into four groups including retail, commercial, industrial and wholesale employment. Table 3.3 shows the totals for these types of employment.

Table 3.3: Future Year Socioeconomic Data Employment Totals

	2040 Retail Employment	2040 Service Employment	2040 Manufacturing Employment	2040 Wholesale Employment
Houston County	21,540	73,707	9,653	1,231
Peach County (portion)	2,442	3,265	167	383
Total for WRATS Area	23,982	76,972	9,820	1,614

[2] 3 TAZs in Houston County comprise Robins Air Force Base

With the total growth in the socioeconomic factors determined, the next step was to distribute this growth to the various traffic analysis zones (TAZs) in the study area. The total growth for the study area was separated by county. Initially a portion of the growth in each socioeconomic factor was assigned to the TAZs based on the current development in each TAZ. For example, if one TAZ contained 5% of the total population in Houston County, this TAZ would be given 5% of the total growth in population for Houston County. Similar calculations were done for households and employment as well.

Next, growth was adjusted to distribute additional growth in socioeconomic factors along identified growth areas. Growth areas include the Interstate 75 corridor and the general development trends for Warner Robins to the southwest. TAZs were given a "tag" for growth and a factor was developed for their growth rate. The growth rates developed for the individual TAZs were then used to distribute this second portion of the growth.

Finally, growth in the socioeconomic factors was adjusted based on the future land use map for Houston and Peach Counties. The growth in population and households were assigned to areas where the land use changed to indicate additional residential development or change from other land uses on the existing land use map. For employment growth, the growth was distributed in a more complex manner using the breakdown of the four types of employment for the socioeconomic data which include retail, commercial, industrial and wholesale employment. Employment growth was assigned to TAZs where the percentage future land use maps indicated an increase in land use area associated with the different employment categories.

School enrollment projections were developed using a percentage of the population. The proportion of students to general population was assumed to remain constant. School enrollment was distributed to individual TAZs where a school was identified. New facilities that were identified were assigned population based on the average enrollment for elementary, middle and high schools. Schools where improvements were identified were then given a 20% growth in their student population over existing enrollment. Finally, the remaining school enrollment that was not satisfied by either a new school or improvements to an existing school was distributed equally to the TAZs based on the portion of school enrollment they contained. This would represent overcrowding of all the existing schools in an equal manner and that there is a need for additional schools not currently planned before the year 2040.

Other factors were reviewed to insure the credibility of the socioeconomic data obtained such as the existence of water and sewer or type of soil present. Current planned developments were added and the distribution of socioeconomic data for the TAZs was then reviewed and modified as needed.

3.4 Motor Vehicle Registrations

Table 3.4 lists the current number of total vehicles registered in Houston and Peach Counties by vehicle type. Houston County has 0.93 vehicles per capita while Peach County has 0.99 per capita.[3]

Table 3.4: Number of Registered Vehicles by County by Vehicle Type

Type of Vehicle	Houston County	Peach County
Passenger Vehicles	88,926	14,524
Trucks	28,417	6,829
Trailers	16,702	4,395
Motorcycles	3,884	615
Buses	470	159
Other	0	1
Total	**138,399**	**26,523**

Source: Georgia Department of Motor Vehicles 2015

3.5 Commuting Patterns

3.5.1 Houston County

As shown in Tables 3.5 and 3.6, Houston County tends to be an area where people both live and work. Over 50% of Houston County residents work in Houston County and nearly 50% of employees within Houston County are residents of Houston County. The large numbers of people both working and living in Houston County lead to fewer external trips from outside of WRATS study area. Over 20% of Houston County residents work in nearby Bibb County. About 9% of those working in Houston County commute from Bibb County. The number of people who either live or work in Houston County but not both will likely grow by 2040 as the urban area expands with additional development occurring in neighboring counties.

[3] Based on 2014 population estimates from the US Census Bureau (http://quickfacts.census.gov/qfd) and January 2015 DMV total vehicles.

Table 3.5: Place of Employment for Residents of Houston County

Residence County	Workplace County	Employees	Percent of Total
Houston	Houston	21,407	49.6
Houston	Bibb	9,209	21.3
Houston	Peach	2,120	4.9
Houston	Fulton	1,435	3.3
Houston	DeKalb	643	1.5
Houston	Laurens	509	1.2
Houston	Gwinnett	484	1.1
Houston	Clayton	396	0.9
Houston	Dougherty	367	0.9
Houston	Baldwin	357	0.8
Houston	All Others	6,228	14.4
Total		**43,155**	**100.0%**

Source: US Census 2012 LEHD

Table 3.6: Place of Residence for Employees Working in Houston County

Residence County	Workplace County	Employees	Percent of Total
Houston	Houston	21,407	51.4%
Bibb	Houston	3,636	8.7%
Peach	Houston	1,871	4.5%
Crawford	Houston	544	1.3%
Pulaski	Houston	523	1.3%
Macon	Houston	469	1.1%
Laurens	Houston	466	1.1%
Dodge	Houston	420	1.0%
Gwinnett	Houston	418	1.0%
Bleckley	Houston	414	1.0%
All Others	Houston	11,504	27.6%
Total		**41,672**	**100.00%**

Source: US Census 2012 LEHD

3.5.2 Peach County

In contrast to Houston County being a place where people both live and work, Peach County appears to be more of a bedroom community with only about 20% of County residents remaining in the County for work. Nearly as many Peach County workers reside in Houston County. Since the 2040 population in Peach County is expected to grow more than the County's 2040 employment, it is likely that this trend will continue during the study period.

Table 3.7: Place of Employment for Residents of Peach County

Residence County	Workplace County	Employees	Percent of Total
Peach	Peach	2,259	20.4%
Peach	Houston	1,871	16.9%
Peach	Bibb	1,791	16.1%
Peach	Fulton	554	5.0%
Peach	Cobb	440	4.0%
Peach	Gwinnett	345	3.1%
Peach	DeKalb	240	2.2%
Peach	Muscogee	238	2.1%
Peach	Chatham	195	1.8%
Peach	Richmond	156	1.4%
Peach	All Others	3,002	27.1%
Total		**11,091**	**100.00%**

Source: US Census 2012 LEHD

Table 3.8: Place of Residence for Employees Working in Peach County

Residence County	Workplace County	Employees	Percent of Total
Peach	Peach	2,259	26.3%
Houston	Peach	2,120	24.7%
Bibb	Peach	775	9.0%
Crawford	Peach	360	4.2%
Macon	Peach	269	3.1%
Taylor	Peach	245	2.9%
Dooly	Peach	155	1.8%
Sumter	Peach	88	1.0%
Dodge	Peach	85	1.0%
Jones	Peach	78	0.9%
All Others	Peach	2,153	25.1%
Total		**8,587**	**100.00%**

Source: US Census 2012 LEHD

3.6 Environmental Justice

All Federally funded programs, including the transportation planning process, must consider the program's impact on Environmental Justice (EJ) populations. EJ populations include minorities and low income populations. The intention of the focus on EJ populations is to identify potential transportation planning projects and programs that could adversely impact EJ populations early in the project development process. If potential adverse impacts are identified, the impacts can be weighed against other goals and objectives of the planning process, and if appropriate, mitigating changes to the plans and programs can be made. Planning-level EJ procedures should:

- Assist in identifying plans and programs that have negative EJ impacts
- Document the details of the decision-making process related to impact on EJ populations
- Document how EJ populations were given full and fair opportunities to participate in the planning process
- Provide information to subsequent project development activities that may assist in mitigating negative EJ impacts of plans and programs that proceed beyond the planning level.

Geographic areas identified as containing significant EJ populations are dispersed throughout the study area, as shown on Figure 3.1. Figure 3.1 uses 2012 Census ACS data to show locations where the percentage of minority populations or number of households below the poverty level exceeds the average within the WRATS study area. Table 3.9 shows the percentage of EJ populations within the Warner Robins Metropolitan Statistical Area (MSA).

LRTP public meetings are held in areas accessible to EJ populations. The presumption is that greater accessibility to EJ populations will facilitate their attendance and participation in public meetings and thereby the LRTP policy and decision making processes. Notices for public meetings are prepared and posted in both English and Spanish. Census 2013 ACS 5-year data estimates indicate that only 1.6% of the Warner Robins metropolitan area population speak no English or do not speak English well.

Stakeholder Interviews were conducted with a number of groups with varying perspectives to assist in assessing adequacy of the current regional transportation system and perceived current and future transportation needs. A number of groups representing low income and minority communities within the region were invited to participate in the Stakeholder Interviews. A summary of the Stakeholder Interviews is included in Appendix G.

The on-line Transportation Issues Survey used as part of public outreach and involvement for the LRTP was available in English and Spanish versions. A summary of the Transportation Issues Survey can be found in Appendix H. Respondents were asked as part of the survey to identify their race and income levels and their responses were compared with Census American Community Survey (ACS) data to ascertain if they reasonably reflected the minority and low-income composition of the WRATS region. The percentage of minority respondents, of those who identified their race, was 44.6% (198/444), slightly higher than the MSA minority percentage of 39.3%. The percentage of low- income respondents (less than $15,000 annual income), of those who provided an answer to the question about household income, was 24.2% (105/433), again, slightly higher than the MSA percentage of 16.0% of persons in poverty. Although inexact, because not all respondents provided answers to these questions and because the survey question on household income is somewhat different than the MSA figure on estimated percentage of persons in poverty, these percentages indicate that the Transportation Issues Survey reflects the minority and low-income views of the region.

Table 3.9: Environmental Justice Populations as a share of Warner Robins MSA[3] Population

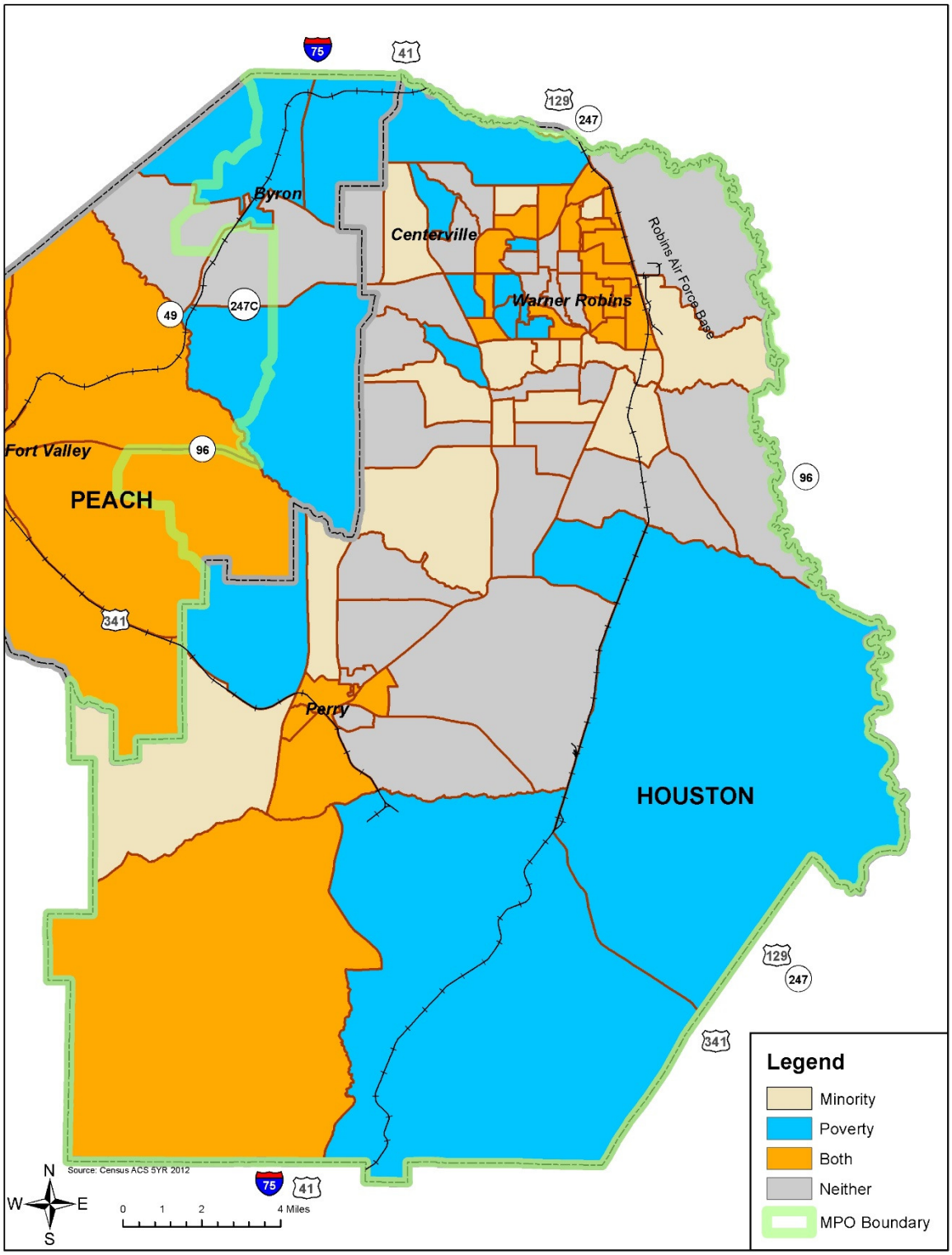
Population	Number	% of Total Population
Total MSA	182,461	
MSA Minority	71,775	39.3%
MSA Poverty	29,224	16.0%
MSA Foreign Born	10,119	5.5%
MSA Hispanic Origin	11,533	6.3%
MSA Low English Proficiency[4]	2,763	1.6%

Source: US Census 2009-2013 5-Year ACS

[3] The 2013 Warner Robins MSA definition includes all of Houston, Peach and Pulaski Counties an area larger than the MPO boundary. The MPO population is approximately 85% of the MSA population.

[4] Low English Proficiency Population includes population who speak English "not well" or "not at all"

Figure 3.1: Environmental Justice Locations by Census Block Group



Source: US Census 2012 ACS

4 Land Use

4.1 Existing

This section of the report includes an inventory and analysis of existing land use patterns within the WRATS Study Area. It begins with a review of the methodology used to obtain the existing land use. From there, existing land use is studied from two different perspectives.

The first examines the Study Area as a whole. The second perspective is taken from the view of specific high growth corridors. In development of the 2030 LRTP the WRATS staff and local planning officials identified a total of fifteen (15) corridors based on the expected growth that was to occur in those areas, and with the anticipation that they would be considered as future "character areas" for the local comprehensive plans. These corridors were defined as being approximately 4,000 feet in width (2,000 feet on either side of the highway) and included those parcels that fell within this boundary. These character areas were refined in the 2006 Houston and Peach County Joint Comprehensive Plans, the most recent county comprehensive plans, which are the basis for the future land use assumptions of the 2040 LRTP[5]. Although initially developed for the 2030 LRTP, these high growth corridors are still relevant to the development of the region and will be used to assess growth and development for the 2040 LRTP.

4.1.1 Existing Land Use Definitions

The following existing land use categories were used:

- **Residential:** The predominant use of the land within this category is for single-family and multi-family dwelling units.

- **Commercial:** This category is for land dedicated to non-industrial business uses, including retail sales, office, service and entertainment facilities, organized into general categories of intensities. Commercial uses may be located as a single use in one building or grouped together in a shopping center or office building.

- **Industrial:** This category is for land dedicated to manufacturing facilities, processing plants, factories, warehousing and wholesale trade facilities, mining or mineral extraction activities, or other similar uses.

- **Public/Institutional:** This category includes certain state, federal, or local government uses and institutional uses. Government uses include city halls and government building complexes, police and fire stations, libraries, prisons, post offices, schools, military installations, etc. Examples of institutional land uses include colleges, churches, cemeteries, hospitals, etc.

- **Transportation/Communication/Utilities:** This category includes such uses as major transportation routes, public transit stations, power generation plants, railroad facilities, radio towers, telephone switching stations, airports, or other similar uses.

[5] Houston and Peach County Joint Comprehensive Plans Short Term Work Programs were updated in 2011 and reviewed for implications to land use assumptions for the 2040 LRTP.

- **Park/Recreation/Conservation:** This category is for land dedicated to active or passive recreation uses. These areas may be either publicly or privately owned and may include playgrounds, public parks, nature preserves, wildlife management areas, national forests, golf courses, recreation centers, or similar uses.

- **Agriculture/Forestry:** This category is for land dedicated to farming (fields, lots, pastures, farmsteads, specialty farms, livestock production, etc.), agriculture, or commercial timber, or pulpwood harvesting.

- **Undeveloped/Vacant:** This category is for lots or tracts of land that are served by typical urban public services (water, sewer, etc.) but have not been developed for a specific use or were developed for a specific use that has since been abandoned.

These existing land use categories are consistent with the 2006 Joint Comprehensive Plans for Houston and Peach Counties, and the 2014 Houston County Amended Plan Update and the Peach County 2012-2016 Short Term Work Program.

4.1.2 Total Study Area Perspective

Figure 4.1 shows the existing land use for the WRATS Study Area. Because of the size of the WRATS Study Area, it was decided to illustrate existing land use with a graphic showing the region and insets showing the cities of Byron, Centerville, Perry, and Warner Robins. The existing land use narrative includes an analysis of each land use category for the study area as a whole. Table 4.1 portrays the total acreage by land use category for the entire study area.

Table 4.1: Total Acreage by Land Use Category in WRATS Study Area

Land Use Category	Total Acreage	% of Study Area Acreage
Residential	57,624	22.1%
Commercial	7,169	2.8%
Industrial	6,653	2.6%
Public/Institutional	34,129	13.1%
Trans/Comm./Utilities*	335	0.1%
Park/Rec./Conservation	2,096	0.8%
Agriculture/Forestry	145,543	55.9%
Undeveloped	3,982	1.5%
Total	260,218	100.00%

* Does not include highway and railroad rights-of-way
Source: MGRC and WRATS

Residential

Residential land use within the WRATS Study Area is concentrated in general between Dunbar Road in the north to Highway 127 to the south and in portions of the City of Byron and Perry. The higher density (greater than four units per acre) residential uses that include a mixture of single-family, duplex, and multi-family are generally located: (1) east of Houston Lake Road, south of

Dunbar Road, and north of Russell Parkway in Warner Robins; and (2) in the City of Perry in close proximity to the downtown area. South of Russell Parkway to approximately Highway 127 north of Dunbar Road, the City of Centerville and in portions of Byron and Perry, residential development is suburban-like in character with lower densities (less than four units per acre) and almost entirely single-family development. There is increasing residential development south of Highway 96, particularly east of Highway 247 near Bonaire. The area below Highway 127 in the unincorporated area of Houston County and south of the Russell Parkway Extension in unincorporated Peach County can be classified as rural residential with most of the lots over one acre in size and the parcels containing a mixture of single-family site-built and manufactured homes units.

Commercial

The types of commercial development in the WRATS Study Area can be classified as follows: (1) Central Business District; (2) strip highway commercial development; (3) neighborhood commercial centers; (4) regional commercial centers; (5) interstate commercial development; and (6) rural convenience commercial development.

Central Business District

The Cities of Perry and Byron are arguably the only communities in the WRATS Study Area that have central business districts. In these areas, there is a mixture of government, retail, and services uses blended together into one cohesive and well-defined area.

The City of Perry, Downtown Development Authority, Perry Chamber of Commerce and the business owners have made a considerable investment in the downtown area over of the last decade to make it an attractive place to shop and work. Downtown has a complete sidewalk system and is streetscaped. In addition, the shared-use trail system that is currently under development will connect the downtown area with the community's residential areas and the State's Agri-Center, thus bringing more residents and visitors into the area, but without the traffic congestion and the need for more parking.

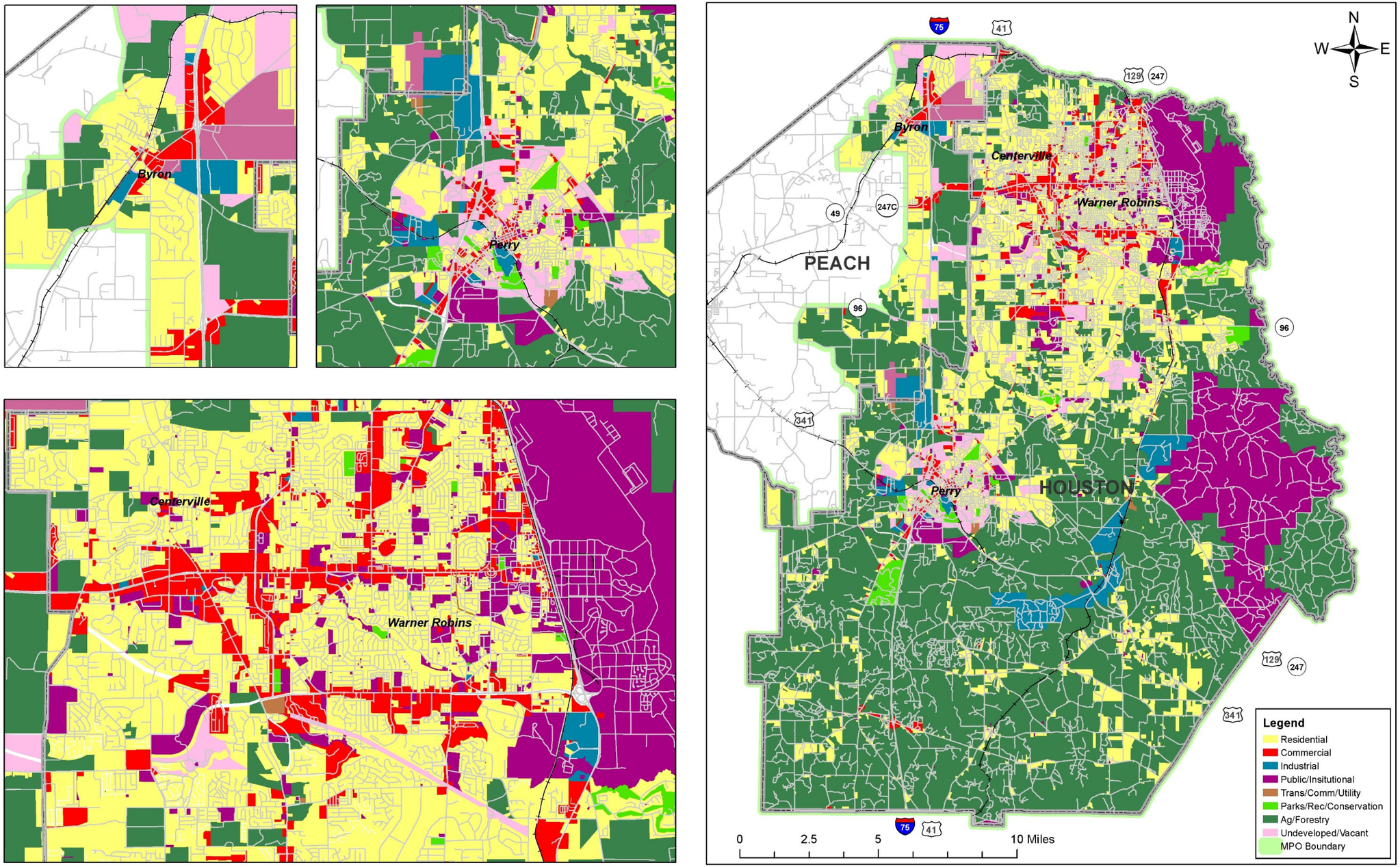
The City of Byron has been designated as a Better Hometown Community by the Georgia Department of Community Affairs. The local Better Hometown Committee along with the City of Byron and business owners, like the City of Perry, are making major investments in the central business area both in terms of time and money to make it appealing for both local residents to shop and entrepreneurs to invest into new businesses. Additional sidewalks are currently planned.

Strip Highway Commercial Development

Strip highway development is the predominant commercial use in the WRATS Study Area. It first began in the older section of Warner Robins on Watson Boulevard and North Davis Drive, and from there it has now spread all along Watson Boulevard/Highway 247 Connector to US 41, Russell Parkway from just west of Highway 247 to Houston Lake Road, portions of Houston Lake Road from Watson Boulevard to Russell Parkway, portions of Highway 96, Highway 49 in Byron from White Road to Interstate 75, and along Sam Nunn Boulevard in Perry. This type of commercial is characterized by its variety and intensity of commercial uses; both retail and service, numerous curb cuts and lack of access management that impacts traffic flow, and general visual unattractiveness due to the amount of signage and utility poles and a lack of building design controls. Another concern about strip commercial developments is the tendency for businesses to move out of older strip areas and move into new developments. From a

business point of view, this makes sense because the new development may be more attractive, have more parking, and be closer to growing residential markets.

Figure 4.1: Existing Land Use Map



From a community standpoint, these older commercial areas can become abandoned and create a blighted effect on the surrounding area, thus reducing property values, tax base, and the initiative for private investment. It will be important for the communities in the WRATS Study Area to: (1) establish redevelopment strategies for these older strip commercial areas that correspond with the overall neighborhood redevelopment plans; and (2) establish a balanced approach for encouraging new commercial developments in the growing urban area, while at the same time making it more attractive for private investment in older neighborhoods, both in terms of creating new residential and commercial opportunities.

This type of development is likely to continue to take place along several other major thoroughfares in the WRATS Study Area unless some changes in commercial development regulations are put in place to encourage more mixed-use development and controls on signs, curb cuts, utility installations and building design and appearance.

Neighborhood Commercial Centers

Neighborhood commercial centers have been developed within the strip commercial areas along Watson Boulevard and Russell Parkway in Warner Robins, Sam Nunn Boulevard in Perry, and Highway 49 in Byron. The older centers have found it difficult to compete with the new suburban centers and have lost many tenants. Fortunately, however, several have recently been renovated and have found new tenants, thus maintaining the flow of tax monies and jobs, and preventing them from being a blight to the area.

As mentioned above, there have been new neighborhood commercial centers constructed in the suburban areas along Highway 96 to keep up with the demand for retail and services of those residents moving to the area. In addition to Highway 96, another popular area for new neighborhood centers is along the Highway 247 Connector west of Houston Lake Road. These centers are taking advantage of the proximity to Galleria Mall and the growing population in Centerville and east Peach County.

An important aspect of the commercial development along Highway 96 is that the new centers are located at key nodal points (Houston Lake Road and Lake Joy Road). Local planners should take further advantage of this nodal development by encouraging a mixture of residential, office, and retail development to occur along Highway 96 and connect them to these nodal areas with alternative transportation modes and appropriate access management. These concepts should be incorporated into the design and construction of an improved and widened Highway 96. Enacting and enforcing certain regulatory measures in the near future may prevent a reoccurrence of strip commercial development that has taken place along the major thoroughfares to the north; and help to establish an attractive living, shopping, and working environment; reduce traffic congestion; and establish a trend for development along other major thoroughfares likely to face commercial pressures such as Highway 127 and Perry Parkway. Such regulations have been recommended along the Russell Parkway Extension in hopes of accomplishing the above objectives. An overlay zoning ordinance was adopted in 2005.

Regional Commercial Centers

Regional commercial centers take on several forms in the WRATS Study Area; retail malls and specialty centers and large shopping centers anchored by big-box retail establishments. The largest retail center in the WRATS Study Area is the Galleria Mall located in Centerville at the intersection of Highway 247 Connector (Watson Boulevard) and Houston Lake Road. The Galleria Mall not only attracts customers from the study area, but also from many other cities and counties in the region. The size and importance of this retail center, along with the customer base it

attracts, has led to the development of other satellite centers and retail/service/office establishments along Houston Lake Road and the Highway 247 Connector. This area is likely to see continued commercial growth towards US 41 and Interstate 75; but as mentioned in the strip commercial development and the regional commercial centers discussion above, it is recommended that development regulations be put into place that will encourage a greater mixture of uses, a pleasant and attractive street appearance, an increased reliance on alternative transportation modes, and which maintain the free flow of traffic along the Highway 247 Connector by reducing ingress/egress points on this major thoroughfare and encouraging interparcel access between adjacent developments.

The one specialty center in the WRATS Study Area is the Peach Outlet Mall on Highway 49 in Byron. This center has taken advantage of its location near Interstate 75 (though it has lost and gained many different tenants over the years) to become an important retail center that attracts large numbers of people from the region and beyond. The widening of Highway 49 from I-75 to US 41 in Houston County again presents an opportunity for local planners to shape the way this area develops during planning period. Using the increased accessibility created by the widening project and the presence of the currently successful Peach Outlet Mall and South Industrial Park, in nearby Bibb County, lends itself to many creative ways of mixing existing and new residential/commercial development into an appealing entranceway to Peach and Houston Counties.

The remaining regional commercial centers within the WRATS Study Area are those that are being anchored by big-box retailers. These centers are located on Watson Boulevard in Warner Robins and Sam Nunn Boulevard in Perry. One of the biggest problems with regional commercial centers such as these is that the big-box retail establishment(s) has no loyalty to an area. Once another area becomes more attractive, the respective big-box retailer(s) will leave an existing center and move to the new one. This leaves an enormous vacant building or buildings in which to fill, many times remaining vacant for months or even years, thus impacting other commercial establishments in the area. Sections of Watson Boulevard are currently in the midst of such an experience. A newer regional center has recently been built near Carl Vinson Parkway, while further to the east several older centers that were abandoned by the big-box retailers to go to this new center are struggling to find new tenants.

It is possible that a similar scenario may occur in the Perry area, particularly as the growth of that community is planned to move to the north and east. It is important to learn from the Watson Boulevard experience and establish a plan early to maintain this portion of Sam Nunn Boulevard as an important regional commercial center if and when a decision is made by the big-box retailers to vacate and move to other areas or as big-box retail is increasingly supplanted by internet sales.

In all likelihood, future land use plans will recommend new regional commercial areas in the WRATS Study Area. Local planners and community officials should take advantage of the time that they have between the now and when these centers will be built to prepare development scenarios for the respective areas and adopt the necessary regulations to successfully implement these scenarios. If one fails to learn from the past, they are doomed to repeat it.

Interstate Commercial Development

Commercial development that has occurred at the interstate interchanges at Highway 49 and the Highway 247 Connector are the typical uses that generally serve the interstate traveling public; service stations, restaurants and motels, and entertainment venues. Though there are land development regulations in place, there are no overall development plans for these areas that

address building design and appearance, signage, ingress/egress, etc. These interchanges are opportunities to establish striking entranceways that will leave a positive and lasting impression on the visitor about that community. These opportunities exist for the new interchanges at the Russell Parkway Extension and Highway 96 and the interstate corridor north to White Road. The recently completed Veterans Memorial Parkway between Highway 247C/Watson Boulevard and Russell Parkway may present additional opportunity to develop commercial developments that serve interstate travelers.

Rural Convenience Commercial Development

Many people want to live and enjoy the rural life away from the frantic pace of urban life; however, they also want the reassurance they can drive a short distance to pick up necessity items without having to go back and face the traffic congestion in the city. Realizing this fact, a number of entrepreneurs with permission granted through the local zoning ordinances have constructed small commercial centers that meet this specific need. These centers that include a convenience food store, gas station, dry cleaners and possibly other related uses are situated throughout the WRATS Study Area. With the likely conversion of once rural areas to urban or suburban areas in the future, these centers will likely become prime locations for new neighborhood centers to serve this newly planted population base. Convenient commercial centers will still have their importance in the future, but will be relegated to a much smaller rural area in the WRATS Study Area.

Industrial

Industrial activity in the WRATS Study Area can be classified as either light industrial or heavy industrial. Light industrial uses are generally those operations where the effects of the industrial operation are not detectable beyond the boundaries of the property. Light industrial uses include warehousing and wholesale trade facilities. Heavy industrial uses contain most of the fabrication, processing, storage, and assembly operations in the community. These uses may generate noise, odors, and smoke that are detectable beyond the boundaries of the property.

Most of the light industrial activity is found within the Perry City Limits; the Airport Industrial Park in the northern part of the City, the industrial park along Valley Drive in the western section of the City, and a small industrial area off General Courtney Hodges Boulevard. The other large industrial area in the WRATS Study Area, dedicated primarily to light industrial uses, is along Highway 247 just south of Russell Parkway. Highway 96 is likely to be attractive to some light industrial uses as its widening is completed between I-75 and I-16.

Heavy industrial uses are concentrated in the southern portion of Houston County along Highway 247/Highway 247 Spur/US 341. These include the Frito-Lay and Perdue Farms processing facilities and the Medusa cement plant. The remaining heavy industrial site in the study area includes several well-established companies; Tolleson Lumber Company and Davis Oil Company situated off Jernigan Street south of Perry's central business district.

In addition to those described above, there are several smaller industrial uses scattered throughout the Study Area. Though the industrial employment sector is relatively small compared to several of the other sectors of the WRATS Study Area economy, it will certainly gain in importance over the planning period in an effort by the local economic development strategists to diversify the economy and reduce its dependence on Robins Air Force Base which is the largest industrial employment location in Georgia.

Public/Institutional

By far, the largest public/institutional use in the WRATS Study Area is Robins Air Force Base. The other large public/institutional uses include: the Houston and Peach County Board of Education schools; the administrative offices; fire stations and law enforcement centers for the Cities of Byron, Centerville, Perry, and Warner Robins and Houston and Peach Counties; the University of Georgia Fruit and Nut Research Center off Dunbar Road; Central Georgia Technical College; Middle Georgia State University – Warner Robins Campus, the Georgia National Fairgrounds and Agricenter; the Houston County Medical Center facilities in Warner Robins and Perry; and the Advance Technology Park that is the home of several university research centers designed to support Robins Air Force Base and the aerospace industries in the area. There are also numerous public libraries, churches, cemeteries, and post offices scattered throughout the area.

Transportation/Communication/Utilities

The transportation/communication/utilities land use category (T/C/U) includes the sites within the study area that are occupied by radio towers, telephone switching stations, electric substations and other similar uses. The largest of the T/C/U uses is the Perry-Houston County Airport. Though railroad and street/highway rights-of-way are included in this particular category, the acreage shown in Table 4.1 does not reflect this because of the extreme difficulty in determining an accurate acreage figure for these rights-of-way.

Park/Recreation/Conservation

Included in this land use category are the Oaky Woods Wildlife Management Area; the state park site south of Perry, which includes the Flat Creek Public Fishing Area; the public and private golf courses; and the public parks, playgrounds, and recreation centers located within the six jurisdictions comprising the WRATS Study Area. Establishing new parks, recreation, and conservation areas should be an important priority for local governments during the planning period. It is critical that attention be brought to this matter rather quickly in order to protect potential areas of passive and active recreation and important conservation areas before they are consumed by urban development. The local governments in the WRATS Study Area should take advantage of state programs to acquire land to set aside for conservation and open space purposes or for the development of greenways, particularly in major wetland and floodplain areas. They should also strongly consider amending their regulations to encourage conservation subdivisions that allow for the clustering of housing units, thus freeing the remaining land for open space and passive recreation areas. A major metropolitan area has as its major responsibilities; to protect its sensitive natural resources, and to provide its residents with various recreational choices and places to live that are developed within natural surroundings. The on-line Transportation Issues survey conducted for the 2040 LRTP included numerous public comments on the need for additional parks and recreation areas.

Agriculture/Forestry

In terms of acreage, this is the largest land use category in the WRATS Study Area. Though most of the agricultural/forestry areas are presently situated south of Highway 127 and the Ocmulgee River floodplain in Houston County, there are still many parcels in the “urbanized” portion of the study area that still remain in this land use and provide excellent locations for infill-type development. These areas include: (1) the section between US 41 and Interstate 75 from White Road to south of Highway 96; and (2) portions of Dunbar Road, the Highway 96 corridor and the Byron area.

It is assumed that despite efforts for infill development in the areas mentioned above, many acres currently in agricultural/forestry usage will succumb to urban-type development. As was explained in the park/recreation/conservation section, local development regulations should be amended that will encourage developers to maintain portions of their sites for open space and conservation purposes, thus maintaining some semblance of the rural character within the urban setting. For those areas that are planned to remain in agriculture/forestry uses, the same development regulations should insure that such uses can be continued without intrusion and interference by urban uses.

Undeveloped/Vacant

Land that is served by public utilities, but has not been developed for a specific purpose is primarily located within the City of Perry, north and east of the City of Byron, and along the I-75 Corridor from White Road and Highway 96. As with tracts of agriculture/forestry land within the urbanized portion of the WRATS Study Area, these undeveloped or vacant parcels become potential infill development sites. Several of above undeveloped areas will be reviewed in more detail in the next section under the corridor area perspective.

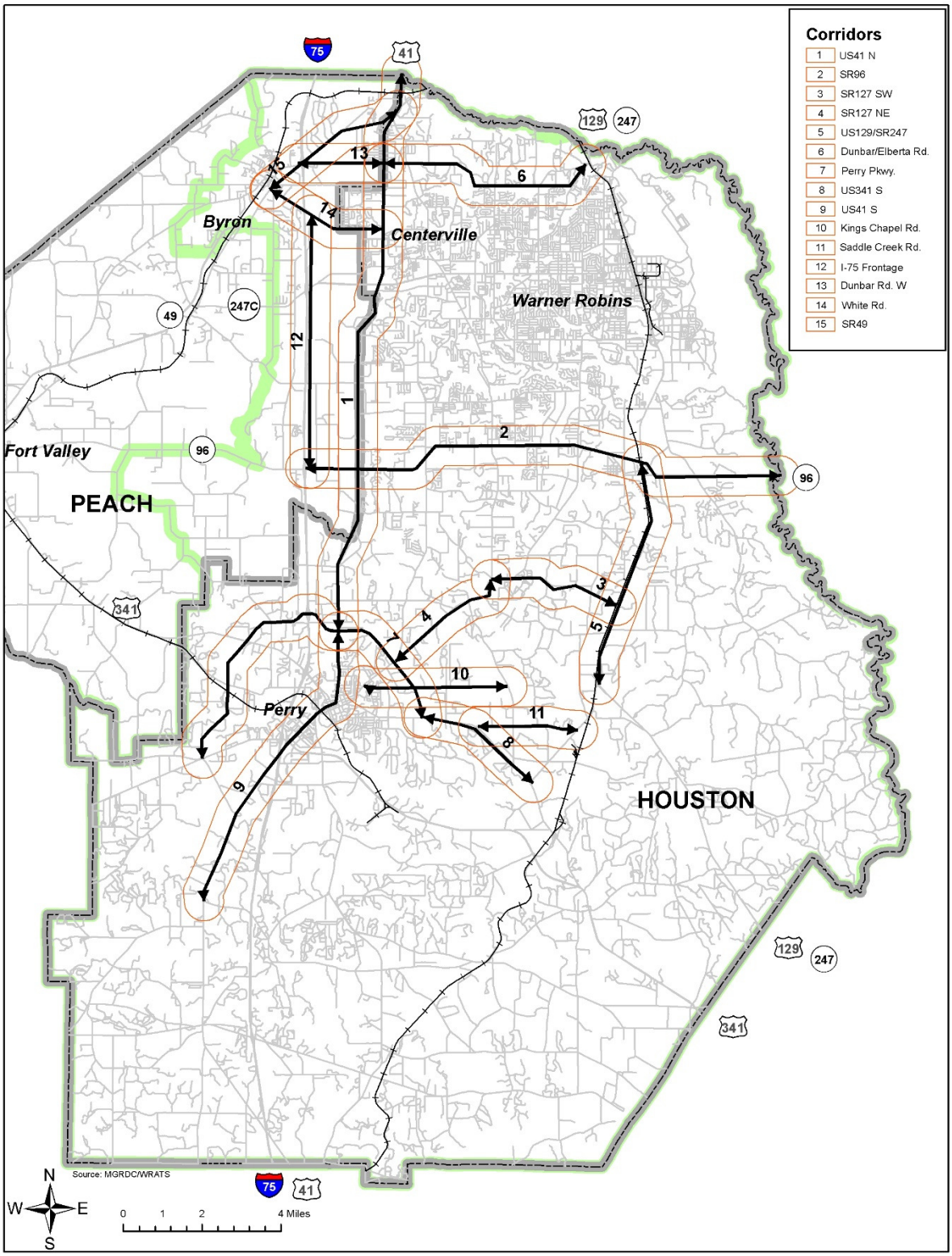
4.1.3 Corridor Area Perspective

There are certain highway corridors in the WRATS Study Area, according to local planning officials that are expected to see substantial land use changes during the planning period. These land use changes will, in turn, have a considerable impact on the surrounding highway system to accommodate the growth in traffic demand. With this in mind, a decision was made by the WRATS and Regional Commission staffs to study the land use and transportation characteristics of fifteen potential (15) high-growth highway corridors. These high growth corridors are depicted in Figure 4.2 This section will include a review of existing land use and 2010 Base Year and 2040 Network Level of Service.

The corridors that have been selected for this study are as follows:

- Corridor 1: US 41 - North County Line to Perry City Limits
- Corridor 2: Highway 96 - I-75 to Ocmulgee River
- Corridor 3: Highway 127 - Houston Lake Road to SR 247
- Corridor 4: Highway 127 - Perry Parkway to Houston Lake Road
- Corridor 5: Highway 247 - Highway 96 to Highway 247 Spur
- Corridor 6: Dunbar Road/Elberta Road - Highway 41 to Highway 247
- Corridor 7: Perry Parkway - US 341 to Highway 224
- Corridor 8: Highway 341S - Perry Parkway to Highway 247 Spur
- Corridor 9: Highway 41S - Perry Parkway to Fire Tower Road
- Corridor 10: Kings Chapel Road - Highway 127 to Arena Road
- Corridor 11: Saddle Creek Road - Highway 341 to Highway 247
- Corridor 12: I-75 Frontage - SR 96 to White Road
- Corridor 13: Dunbar Road W - Highway 41 to I-75 and Highway 49
- Corridor 14: White Road - Highway 49 to Highway 41
- Corridor 15: Highway 49 - White Road to Highway 41

Figure 4.2: 15 High Growth Corridors



Corridor 1: US 41 - North County Line to Perry City Limits

- Existing Land Use Conditions
  - Residential development consists primarily of single-family, low-density subdivisions and single-family units on large lots throughout the entire length of the corridor.
  - Commercial uses are concentrated at the intersections of other major thoroughfares; Highway 49, Highway 247 Connector, and the Perry Parkway.
  - Agriculture/forestry and undeveloped lots scattered along the corridor provide opportunities for infill residential development, with the exception of those close to the intersection of major thoroughfares where office and retail development is likely to occur.
- Level of Service (LOS) and Other Transportation Issues
  - Maintains a Base Year LOS C or D for most of the corridor
  - In the Year 2040 Network 5, LOS problems exist between Russell Parkway and Feagin Mill Road.
  - Numerous ingress/egress points on this major thoroughfare create serious conflicts with through traffic. The problem will likely get worse as vacant parcels are developed.

Corridor 2: Highway 96 - I-75 to Ocmulgee River

- Existing Land Use Conditions
  - Residential development includes mixture of single-family, low-density subdivisions and single-family units on large lots in the western portion of the corridor.
  - Commercial development located at certain nodal points; Lake Joy Road, Houston Lake Road, and Highway 247.
- Level of Service and Other Transportation Issues
  - Base Year LOS is generally good except between I-75 and Highway 11/US41. LOS problems persist in the 2040 Network between I-75 and Highway 11/US41 and to a lesser extent from Houston Lake Road to Highway 247 (despite current widening and improvements); again emphasizing the importance of establishing an alternative transportation mode along the corridor, as well as controlling ingress/egress points to reduce conflicts with heavy through traffic. All widened sections of Highway 96 through Houston County from Peach County to Twiggs County will have bike lanes.

Corridor 3: Highway 127 - Houston Lake Road to SR 247

- Existing Land Use Conditions
  - Primarily rural residential with many vacant parcels until Moody Road, then it begins to take on a more suburban character.
- Level of Service and Other Transportation Issues
  - Houston Lake Road to Moody Road worsening to LOS E by 2040. Part of the design plan for this area is to insure that traffic congestion between Houston Lake Road and Moody Road does not worsen, while at the same time maintaining the good LOS for the remainder of the corridor.

Corridor 4: Highway 127 - Perry Parkway to Houston Lake Road

- Existing Land Use Conditions

  - Very similar to Corridor 3 with its single-family developments and abundant vacant parcels gives the impression that this is an area in transition from rural to suburban with its two nodal points; Perry Parkway and Houston Lake Road ready to explode with more intense urban development
- Level of Service and Other Transportation Issues
  - No LOS problems that were in either the 2010 Network or in the 2040 Network perhaps due to a recent widening project which included sidewalks.
  - The key is to protect this LOS throughout the planning period while this corridor experiences enormous change in land use development. That is another reason for an effective design concept and for it being a possible character area.

Corridor 5: Highway 247 - Highway 96 to Highway 247 Spur

- Existing Land Use Conditions
  - An unusual mix of developments within this corridor; low-density, single-family residential with some strip commercial in the north to a primarily rural area in the south that is punctuated with a major heavy industrial use (Frito-Lay).
- Level of Service and Other Transportation Issues
  - No LOS problems in either the 2010 base year or the 2040 Network. A proposed widening project has been moved to the illustrative project list.
  - With the widening of Highway 96, Highway 247 should be monitored for additional development pressure. Highway 247 may be attractive to additional industrial development including warehouse and distribution or logistics centers.

Corridor 6: Dunbar Road/Elberta Road - Highway 41 to Highway 247

- Existing Land Use Conditions
  - The transition from rural to urban is extreme along this major thoroughfare that cuts across the northern portion of Houston County. Heading east from Highway 41, it is entirely rural with some scattered residential and institutional uses. However, when going past General Lee Road, the scene transitions immediately to urban with its mixture of residential, commercial, industrial, and institutional uses that gives the appearance that the development occurred with little or no planning.
- Level of Service and Other Transportation Issues
  - LOS problems are beginning to show up on the 2010 base year network to the west of North Houston Road with the remainder operating at LOS C or better, and the 2040 Network shows the LOS reaching E/F on this section.

Corridor 7: Perry Parkway - US 341 to Highway 224

- Existing Land Use Conditions
  - The corridor along the Perry Parkway has a very diverse land use mix. At the northern end near I-75 to US 41 there are residential, commercial, and industrial uses; between US 41 and US 341 there are residential, public/institutional, several parcels of commercial and numerous vacant parcels; and between I-75 and Highway 224, it is mostly vacant land on either side with an industrial park and a major residential retirement community sandwiched between.
- Level of Service and Other Transportation Issues

- The 2010 and the 2040 Network shows the LOS as C or better. The ultimate challenge is to establish a design concept that will create an effective mixture of uses that will allow traffic to move in such a manner as to not negatively impact the Parkway's LOS.
- The completion of Perry Parkway between Highway 224 and its current terminus approximately one mile to the north is currently under consideration.
- A system of bicycle/pedestrian trails should be investigated as part of the design concept for the Parkway to promote connectivity between the various uses and with the shared-use trail system under development in the City of Perry.

Corridor 8: Highway 341 S - Perry Parkway to Highway 247 Spur

- Existing Land Use Conditions
  - A predominately rural area that includes a major rural-residential single-family subdivision at its central point and heavy industrial uses to the south.
- Level of Service and Other Transportation Issues
  - The LOS is C or better on both the 2010 and 2040 Networks. The maintenance of this LOS is an essential ingredient for any development plan for this corridor.

Corridor 9: Highway 41 S - Perry Parkway to Fire Tower Road

- Existing Land Use Conditions
  - Beginning at Perry Parkway, most of the existing land use is highway commercial designed to serve the traveling public coming off I-75. Proceeding south, there is Georgia National Fairgrounds and Agricenter, with the remainder in agriculture/forestry use except for a few scattered residential and commercial uses. Just north of Fire Tower Road, the State of Georgia has completed work on the new Houston County State Park/Flat Creek Public Fishing Area that changes the diversity and intensity of the land uses in the area.
- Level of Service and Other Transportation Issues
  - LOS is C or better in both the 2010 Base Year Network, and the 2040 Network.
  - Bicycle/Pedestrian trails should be strongly considered that connect the Agricenter with the Houston County State Park.

Corridor 10: Kings Chapel Road - Highway 127 to Arena Road

- Existing Land Use Conditions
  - In another corridor in the Perry area there is a stark contrast in land uses. At the beginning point on Highway 127, most of the development is low-density, single-family subdivisions with a few commercial uses between Highway 127 and Morningside Drive. East of Morningside Drive, the land use changes to mainly public/institutional (Morningside Elementary, Rozar Park, Houston County Public Works, State Detention Center, and the Houston County Administrative Center, Law Enforcement Center and Jail). Beyond the Perry Parkway, the area becomes almost entirely rural, though the construction of a new residential subdivision in this area provides a hint that changes may be coming.
- Level of Service and Other Transportation Issues
  - Both the 2010 and 2040 Network identifies a LOS of C or better. Maintaining this excellent LOS will have much to do on how the traffic is handled in the newly developed

area between Perry Parkway and Arena Road. As development moves to the east existing sidewalks should be extended.

Corridor 11: Saddle Creek Road - Highway 341 to Highway 247 Spur

- Existing Land Use Conditions
  - Another unique corridor with urban uses at both the beginning and its terminus, with rural uses in between. At its intersection with Highway 341, there is a large single-family subdivision; at the east end, there is the Perdue Farms property.
- Level of Service and Other Transportation Issues
  - LOS for 2010 and 2040 is C or better. Saddle Creek Road has potential as an important collector road between two major arterial highways and the anticipated transition to urban development along the corridor will require a close review of its LOS during the planning period. Regulating the ingress/egress points from the various developments that will occur in the area will help maintain a good flow of traffic and LOS.

Corridor 12: I-75 Frontage - SR 96 to White Road

- Existing Land Use Conditions
  - The east side of I-75 corridor consists of agriculture/forestry and undeveloped sites with scattered rural residential uses between Russell Parkway Extension and Hwy 96; the west side is almost entirely rural residential with several undeveloped parcels.
  - The Highway 247 Connector is the only interchange where highway commercial has taken place with most of these uses located south of the Hwy 247 Connector.
- Level of Service and Other Transportation Issues
  - The LOS is for the most part C or better on I-75 in the 2010 Network. During the next 25 years, the LOS becomes significantly worse with LOS D and E shown in the 2040 Network between the north county line and the Russell Parkway; with LOS D south to the Perry Parkway.
  - The challenge is creating a development plan for the corridor where the LOS on I-75 and the connector roads from the east (Highway 247 Connector, Russell Parkway Extension and SR 96) are projected to be E or F. Any development plan will have to be closely coordinated with the highway improvement projects in the Long-Range Transportation Plan.

Corridor 13: Dunbar Road West - Highway 41 to I-75 and Highway 49

- Existing Land Use Conditions
  - This corridor is almost entirely developed with an array of urban uses; residential, commercial, industrial, and public/institutional (Byron Public Works and UGA Fruit and Nut Research Center). There are only a few vacant lots in the corridor, and those will likely soon see urban development.
  - Substantial residential growth that is occurring in Byron, northern Peach County and into neighboring Crawford County will greatly impact this corridor because of the increased traffic that will be generated by these developments and the desire of this traffic to go to Warner Robins and Houston County.
- Level of Service and Other Transportation Issues
  - The section of Dunbar Road between US-41 and I-75 begins to show LOS C or better in the 2010 Base Year network. The lack of a bridge connection over I-75 skews the

traffic projections on Dunbar Road east of the interstate because the desire line is to Warner Robins and Houston County; but this movement can only be handled by the frontage road coming from Highway 49--not very desirable from a motorist standpoint due to its circuity, thus traffic is routed by the model to White Road or Highway 49.

- Serious discussion will need to take place between WRATS and DOT officials about a new bridge over the interstate to reduce the traffic loads on Highway 49 and White Road, and to establish another viable route to Warner Robins, Houston County, and Robins Air Force Base.
- As Dunbar Road takes on greater importance in the future, an extension is needed from US 41 to connect it with the Dunbar Road on the east side. This will insure a free flow of traffic from the Byron area to SR 247.

Corridor 14: White Road - Highway 49 to Highway 41

- Existing Land Use Conditions
  - I-75 provides an important demarcation between the more intense urban uses on the west to the more rural and rural residential setting to the east. It is unlikely that the development patterns east of I-75 will remain as they are in the near future, due to the enormous housing demand and the increased importance of White Road as a major travel route to Warner Robins and Houston County from Byron, northern Peach County, and Crawford County.
- Level of Service and Other Transportation Issues
  - LOS along White Road begins to show LOS D/E in the 2010 Base Year network and gradually worsens during the planning period. However, improvements on New Dunbar and Dunbar Roads mentioned above may result in improvements to the LOS on White Road. In any event, traffic volumes should be closely monitored along White Road to capture any changes to the LOS as they occur.
  - White Road has the potential of being an excellent alternative transportation route between Byron and Warner Robins/Houston County, thus any development or road improvement plans should incorporate such a route. Consideration of widening and other improvements to White Road from Highway 49 to Highway 11/US41 should be part of the 2040 LRTP.

Corridor 15: Highway 49 - White Road to Highway 41

- Existing Land Use Conditions
  - The corridor has three distinct land use sections: (1) White Road to Interstate 75 - includes highway commercial uses that serve the highway traveling public coming from the interstate, a regional specialty mall, community commercial that serves residents in Byron and the surrounding area and several residential subdivisions and public/institutional uses; (2) West of the Peach Outlet Mall to Highway 49 - includes several residential subdivisions, the UGA Fruit and Nut Research Center, and several large vacant parcels; and (3) Intersection around Highway 41 - combination of residential, commercial, and public/institutional uses. To the north and west of the interchange of I-75 and Highway 49 a new freight logistics center is currently planned.
- Level of Service and Other Transportation Issues
  - The 2010 network shows some LOS D/E to the northeast of the I-75 interchange. This should be improved by the proposed widening project on Highway 49 between I-75 and

Highway 11/US41 but again shows LOS E by 2040. Proposed Dunbar Road and White Road improvements should also help.

- Highway 49 will likely remain a major route for traffic headed for Bibb County and portions of Houston County. As Dunbar Road and White Road take on greater importance, some of the traffic currently going to Warner Robins, Houston County, and Robins Air Force Base will be diverted to these routes and help maintain the LOS on Highway 49.

4.2 Future Land Use Plan

This report incorporates recommended future land use plans for the WRATS Study Area that were developed as part of the 2006 Houston and Peach County Joint Comprehensive Plans.[6] These Comprehensive Plans embody the development trends and utility expansion plans that are occurring in their respective jurisdictions, and the collective insights of planning and zoning officials from their constituent communities. The Comprehensive Plans drew their future transportation system assumptions from the 2030 WRATS LRTP. This interrelation between the region's Comprehensive Plans and LRTP ensures consistency between the regions land use and transportation objectives.

WRATS staff are directly involved in reviewing Developments of Regional Impact (DRI), large-scale land use developments, within the region. WRATS staff are also involved directly in assessing transportation impacts of proposed land use and developments in the City of Warner Robins. Other local jurisdictions within the region apprise WRATS of active land use and development proposals. WRATS staff participates in the comprehensive planning process for Houston and Peach Counties. These activities enable WRATS to continually monitor and assess the transportation impacts of proposed development and land use changes in the region, and to engage in discussion of policies and strategies to minimize adverse transportation impacts and to promote sound land use development practices.

Figure 4.3 illustrates the recommended future development plan for the WRATS Study Area from the 2006 Houston and Peach County Joint Comprehensive Plans. Because the future land uses from the Joint Comprehensive Plans are a blend of character area overlays and land use categories, these had to be related back to changes in residential, commercial and industrial development for use in the 2040 WRATS LRTP.

This plan was formulated using the data analysis presented earlier in the report and the policy statements that were outlined in the previous section. The existing land use maps displayed earlier in the report showed parcels that were in agriculture/forestry or undeveloped uses. The future land use plans attempt to establish specific uses for most of the agriculture/forestry and undeveloped property identified on the existing land use maps knowing that some of the parcels will continue to be used for agriculture/forestry uses or remain vacant throughout the planning period. It is impossible to determine where and how much land will be developed for what purpose; therefore, a determination was made as to the best possible use of the land with the knowledge available.

With the exception of the Ocmulgee River floodplain, no new parks/recreation/conservation areas were identified. It is obvious that the general public will demand new passive and active recreation and conservation/greenspace areas in the future. There are many different factors, however, that

[6] These are the most recent comprehensive plans available and are due to be updated in 2017.

the state and local governments will have to consider before deciding on the location of these areas, including the policy statements above on natural/historic resources thus the decision not to recommend any new p/r/c areas outside the Ocmulgee River floodplain.

The same holds for new public/institutional and transportation/communication/utilities uses. Again, like recreation and conservation uses, there will be a need and a demand for new police and fire stations, schools, libraries, post offices, churches, utility substations, radio towers, and the like during the planning period. However, as with p/r/c uses, many variables will need to be considered by the public and/or private sectors before decisions can be reached on their specific locations.

With this in mind, the focus was then placed on determining the future location of residential, commercial, and industrial uses and the different degrees of intensity of these uses. The 2006 Houston and Peach Counties Joint Comprehensive Plans further refine future land use. The information from these plans was incorporated in the 2040 LRTP analysis and recommendations.

One other factor that was considered was the recently completed 2040 Macon Area Transportation Study (MATS) Long-Range Transportation Plan. It was the opinion of the RC staff that the proposed transportation improvements for this study match as closely as possible with those used in the MATS study in order to show the continuity between the planning processes.

4.2.1 Future Land Use Definitions

Outlined below are the residential, commercial, and industrial land use definitions used in the WRATS 2040 LRTP. These definitions are different than those used for the Joint Comprehensive Plans for Houston and Peach Counties; though a number of categories are similar. ***The description in parentheses next to each land use definition below shows the Joint Comprehensive Plan land use categories associated with that land use.***

In order to determine the changes in residential, commercial and industrial development, the future land use categories in the Houston and Peach County Joint Comprehensive Plans had to be equated to existing land use categories used in the WRATS LRTP. The future land use categories are somewhat different than the existing land use categories and there is some variation in the categories between Houston and Peach counties. Future land use categories accommodate more mixed use development and allow for differing intensity of land uses within some categories. These future land uses were used in part to determine the location of population, households and employment for analysis of future transportation needs.

Future Land Use Definitions used for the WRATS 2040 LRTP

Residential

- **Rural Residential (Rural Residential)**
  - District meant to preserve rural character of outlying areas of WRATS Study area.
  - Homes on large-lot subdivisions (under one unit per acre) and agricultural/ forestry uses are expected in this district.
  - Public sewer is not anticipated in this district.
- **Suburban Residential (Suburban and Developing Suburban Residential)**
  - District promotes single-family detached dwellings in subdivision settings with higher density single-family attached at appropriate locations.
  - Mixed-use developments that are predominately single-family in nature but may include single-family attached.

- Smaller single-family lots that are ¼ to ¾ acres in size would be appropriate.
- Other appropriate housing types are condominiums and senior citizen housing.
- Smaller lot developments, cluster developments, and attached/multi-family developments should incorporate substantial park or open space.
- Mixed use developments which contain small scale commercial or office in addition to residential uses may be allowed, where appropriate.
- Small scale office developments may be located at appropriate locations to serve a small market area in nearby neighborhoods.

- **Urban Residential (Downtown, Neighborhood, Crossroads and Corridor Residential)**
  - District may include such residential uses as single-family houses; single-family attached and multi-family developments along with nearby small-scale neighborhood convenience retail and services that are intended to serve the needs of the immediate surrounding neighborhood.
  - Developments higher in density than in rural or suburban subcategories should be expected in this classification.
  - Office conversions in single-family residences may be suitable along major thoroughfares where appropriate in this classification. Scale, compatibility, and protection of residential properties are key issues to the appropriateness of the use.
  - Mixed-use village development concept should be considered which allows a variety of residential uses along with small-scale retail and office uses that are blended together under a specific design concept.

Commercial

- **Office (Downtown, Cross Roads Town Center, In Town Corridor, and Regional Activity Center)**
  - Various types of professional, corporate, and administrative office establishments including stand-alone offices, multi-tenant establishments and office supply stores are appropriate in this classification. This district may also include office/warehouse or service centers where deemed appropriate.
- **Community Commercial (Neighborhood, In Town Corridor, and Outlying Corridor)**
  - Retail sales, office, and service uses with the largest establishments being less than 100,000 square feet of floor area, and whose market is primarily community-oriented are expected in this district.
  - Mixed use center concept that allows a variety of retail and office uses with limited residential development that is brought together by a specific design concept on a large tract may be expected.
- **Regional Commercial (Regional Activity Center, Major Highway Corridor)**
  - Retail sales, office, and service uses that support commercial establishments of over 100,000 square feet of floor space whose market is predominately regional in nature are expected. Uses are to be located on highways and major thoroughfares.
- **Central Business (Downtown, Cross Roads Town Center)**
  - Uses include a mix of residential, commercial, and light industrial that are compatible and appropriately scaled to encourage the continued pedestrian nature and ambiance of the downtown area.

Industrial

- **Light Manufacturing (Robins AFB and Environs, Regional Activity Center)**

- Effects of the industrial operation are not detectable beyond the boundaries of the property.
- Includes warehousing and wholesale trade facilities

- **Heavy Manufacturing (Major Highway Corridor, Industrial)**
  - Contain most of the fabrication, processing, storage, and assembly operations in the community.
  - Areas designated for heavy manufacturing may generate noise, odors, and smoke that are detectable beyond the boundaries of the property.

Future Land Use Definitions in the Houston and Peach County Joint Comprehensive Plans

Downtown

- There are four distinct downtown districts within the study area: Byron, Centerville, Perry, and Warner Robins. While the downtowns are well established in Byron and Perry, Centerville and Warner Robins seek to develop more identifiable downtowns.
  - The specific land uses that will be allowed in the Downtown Districts will be as follows: Community Commercial, Public/Institutional, PUD development, Residential Development, Office, and Mixed Use.
  - Downtown districts seek to foster a mix of transportation alternatives, and accommodate and encourage pedestrians and bicyclists
  - Downtown districts may adopt urban design standards to enhance the character and quality of development

Historic District

- There are several distinct historic districts within the study area in Byron, Perry, Elko, and Henderson. Historic districts maintain the integrity of site plans, building design, and landscaping ensure that such resources are not lost within the community.
  - Uses include a mix of Residential, Commercial, Parks/Open Space, small scale Office, Public/Institutional and mixed use where appropriate
  - Generally include preservation and enhancement of pedestrian access and streetscapes

Declining Neighborhood

- Peach County seeks to redevelop declining neighborhoods in the community while at the same time preserving the history and identity of these neighborhoods.
  - Uses include a mix of Residential, Commercial, and Parks/Open Space
  - Accommodate a mix of transportation alternatives

Traditional Neighborhood

- Primarily auto oriented single family housing and subdivisions.
  - Uses include Single-Family Residential, Neighborhood Commercial, Public (especially schools), Parks/Open Space, and mixed use as appropriate to the area.
  - Auto oriented but may accommodate pedestrians and bicyclists within neighborhoods and should be redeveloped to improve pedestrian and bicycle access

Neighborhood Commercial

- Commercial uses oriented toward serving a neighborhood or localized area within a city.
  - Uses include Single-family residential, Multi-family residential, Light commercial uses, Small Scale Office where appropriate, Mixed use developments, which

contain small-scale commercial or office in addition to residential uses, where appropriate.
    - Public/institutional uses such as schools, police and fire stations, library, post office, government and utility office buildings, and churches

In Town Corridor

- Mixed use character/overlay area that promotes: growth, employment options, open space preservation, housing alternatives, transportation alternatives, and a sense of place.
    - Uses include a mix of urban residential, commercial uses, and community facilities at a scale and proximity to encourage walking between destinations
    - May include urban design standards including signage, landscaping, landscape buffering of parking lots, reduced parking requirements, on site storm water retention or detention, and pedestrian and bicycle accommodation,

Regional Activity Center

- Mixed use character/overlay area that promotes: employment options, housing opportunities, transportation alternatives, infill development, support for traditional neighborhoods, and a sense of place.
    - Uses include Industrial; Commercial; Single-Family Residential; Manufactured Housing, Multi-Family Residential, Mixed-Use Developments; Office; Institutional uses including hospitals, nursing homes, and assisted living facilities; and Public uses including schools, police and fire stations, library, post office, government and utility office buildings, and churches
    - May include both architecture and urban design standards to promote compatible character and quality of development
    - Permitted uses vary by regional activity center

Outlying Corridor

- Rural or Suburban Mixed use character/overlay area that promotes growth, employment options, open space preservation, housing alternatives, transportation alternatives, and a sense of place.
    - Permitted land uses depend on the specific character of these corridors

Crossroads Town Center

- Primarily located along major thoroughfares and intersections, these character/overlay areas promote: regional identity, growth preparedness, appropriate businesses, educational opportunities, employment opportunities, historic preservation, open space preservation, environmental protection, transportation alternatives, and a sense of place.
    - Uses include Single-family residential, Multi-family residential, Mixed use developments, Public/institutional uses such as schools, police and fire stations, library, post office, government and utility office buildings, and churches

Crossroads Community

- Character Area overlay includes seven small communities located within the unincorporated areas of Houston County: Bonaire, Kathleen, Clinchfield, Haynesville, Grovania, Elko,and Henderson, which seeks to preserve the existing character of these communities.
    - Permitted land uses depend on the specific character of these locations which range from strictly industrial to purely residential

Robins Air Force Base and Environs

- Character Area overlay identified for areas within or in the vicinity of Robins Air Force Base that present issues of compatibility related to security, noise and accident potential.

- The vision for these areas is a gradual transition of use towards those compatible with the mission requirements as described in the recently completed Joint Land Use Study

Major Highway Corridor

- Character area overlay in Peach County which envisions the development of corridors that present an attractive welcome to visitors as well as depicting a thriving and progressive community.
  - Focus on commercial zoning at Interstate interchanges and clustering high-density development at nodes along major corridors, separated by areas of open space or attractive residential development.
  - Should include appropriate access management, signage, landscaping, lighting and pedestrian and bicycle accommodation as appropriate

Industrial

- **Light Manufacturing**
  - Effects of the industrial operation are not detectable beyond the boundaries of the property.
  - Includes warehousing and wholesale trade facilities
- **Heavy Manufacturing**
  - Contain most of the fabrication, processing, storage, and assembly operations in the community.
  - Areas designated for heavy manufacturing may generate noise, odors, and smoke that are detectable beyond the boundaries of the property.

Airport Hazard

- Overlay zoning to restrict development in the vicinity of the Perry-Houston County Airport

Developing Suburban

- Character area in rapidly growing portions of Peach County that seeks to promote moderate density, traditional neighborhood development style residential subdivisions.
  - New development should be master-planned with mixed-uses, blending residential development with schools, parks, recreation, retail businesses and services.
  - Mix of appropriate housing types, densities, and prices in the same neighborhood.
  - Good vehicular and pedestrian/bike connections to retail/commercial services.
  - Promote street design that fosters traffic calming such as narrower residential streets, on-street parking, and addition of bicycle and pedestrian facilities.
  - Addition of neighborhood/village commercial centers on appropriate infill sites to serve surrounding neighborhood.

Suburban Residential

- District promotes single-family detached dwellings in subdivision settings with higher density single-family attached at appropriate locations.
  - Mixed-use developments that are predominately single-family in nature but may include single-family attached.
  - Smaller single-family lots that are ¼ to ¾ acres in size would be appropriate.
  - Other appropriate housing types are condominiums and senior citizen housing.
  - Smaller lot developments, cluster developments, and attached/multi-family developments should incorporate substantial park or open space.
  - Mixed use developments which contain small scale commercial or office in addition to residential uses may be allowed, where appropriate.

Rural Residential

- District meant to preserve rural character of outlying areas of WRATS Study area.

- Homes on large-lot subdivisions (under one unit per acre) and agricultural/ forestry uses are expected in this district.
- Public sewer is not anticipated in this district.

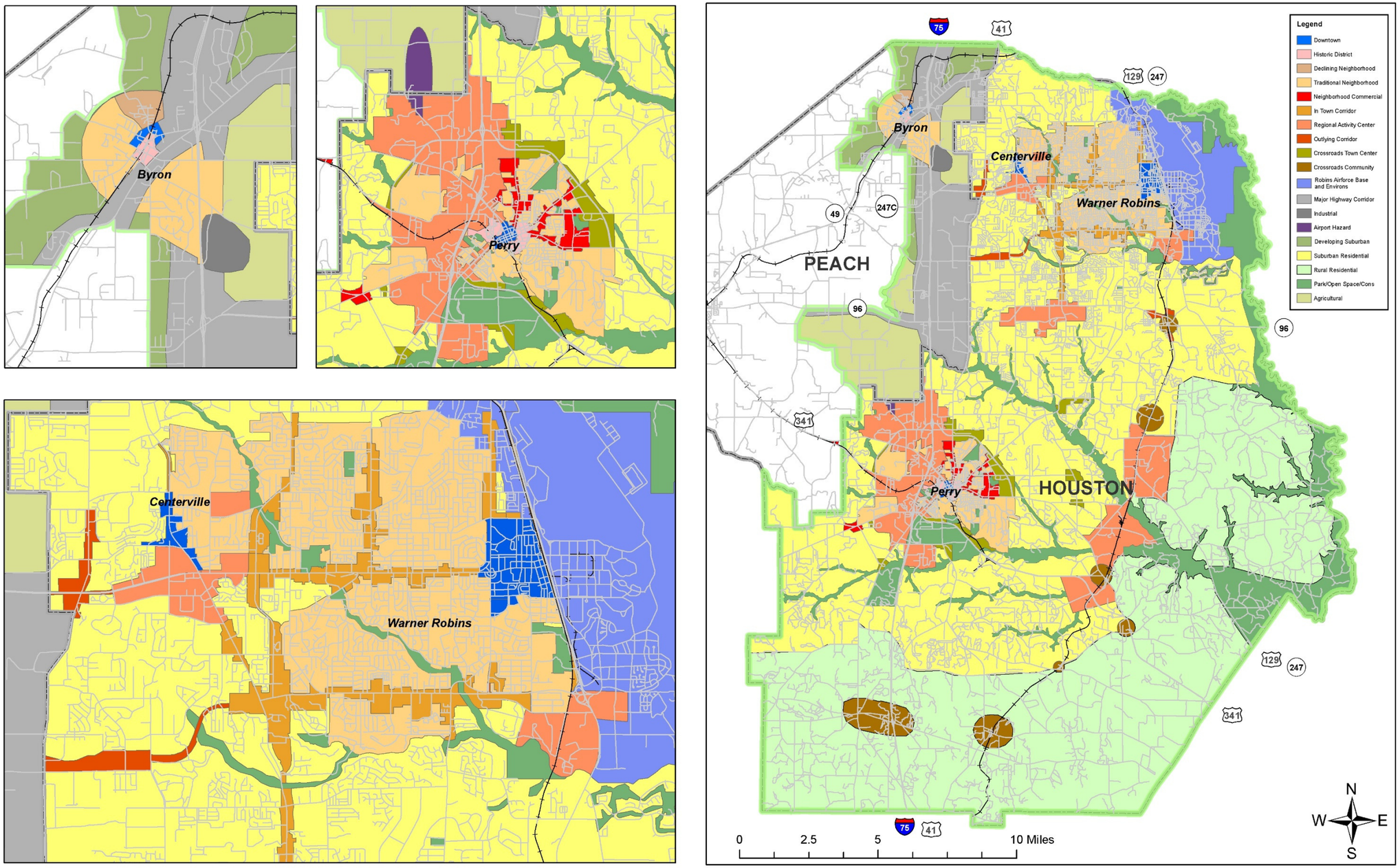
Park/Open Space/Conservation

- A character area in Houston County that includes the wetland and floodplain areas around the Ocmulgee River and major streams in the unincorporated area and Houston County/Flat Creek State Park that seeks to preserve natural habitat, provide public access to undeveloped land and recreational areas.

Agricultural

- Agricultural land uses and preservation of agricultural lands and open space in Peach County

Figure 4.3: Future Development Map



4.2.2 Total Study Area Perspective

Residential

Urban Residential land use is expected by Year 2040 to encompass the area from the Bibb/Houston County line south to Highway 341S/Highway 247 Spur including the City of Perry, the City of Byron, and the unincorporated areas of Peach County. Another area of urban residential is all of the area north and east of Highway 247 to the Ocmulgee River floodplain and Robins Air Force Base. This is dependent on the City of Warner Robins and the City of Perry providing the necessary sewerage service within their respective service areas. It is also assumed, as stated earlier, that some of the existing agriculture/forestry and undeveloped land that has been designated as for urban residential uses will still remain in that use.

Because there is considerable amount of land designated as urban residential does not give license to the trend of continuation of the existing sprawl development. Instead, local communities should follow the policy statements established in the previous section that call for a phased expansion of the urban development boundary line that is coordinated with water and sewer infrastructure expansion. In addition, a closer look needs to be taken to redevelop the older sections of the WRATS Study Area, and encourage mixed-use developments that attract both residents and businesses to this area and, in turn, help to curb sprawl.

Suburban Residential is planned to expand south and west of the City of Perry and east of Highway 247 Spur to Highway 247. The southern boundary will be Felton Road, Firetower Road, Pyles Road, and Grovania Road. To accommodate the growth, the City of Perry will likely have to expand sewer service to this area necessitating a change in the service delivery map, and Houston County will more than likely have to expand the water systems that serve the southern section of the county. It would be desirable that this type of growth not occur in this area until much later in the planning period, and instead focus the growth and public water/sewer infrastructure investment in the urban residential areas, including redeveloped areas of the older sections of the WRATS Study Area.

Rural Residential and rural life in general will still have a place in the WRATS Study Area in the next 25 years. There will be opportunities for citizens who want to have a residence on a large lot or who want to farm or harvest timber to do so. The area south of Felton Road, Firetower Road, Pyles Road, and Grovania Road to the county line, and the area south and east of Highway 247 to the Ocmulgee River have been mostly classified as rural residential. At the present time, the Houston County water systems serving these areas appear to have adequate capacity to handle the growth in the areas designated for rural residential in the foreseeable future.

Commercial

Because of the continued growth in the service and financial/insurance/real estate employment sectors over the planning period, there will be considerable demand for **office** use in the WRATS Study Area. Many of the offices will likely be located in the community and regional commercial areas, as part of mixed use villages and centers located along the major thoroughfares. Specific office use sites have been identified in the Future Land Use Plan for the Perry Parkway. It is very possible that the Perry Parkway could become the major office center in the study area, housing many professional, corporate, and administrative establishments either in stand-alone buildings or part of a multi-tenant establishment. These office complexes could also be part of large mixed-use developments that include residential, commercial, and entertainment uses

creating significant work, live, play, and shop environments that become alternatives to the separate sprawl-like environments of today.

As growth in the WRATS Study Area expands in the urban boundary area, there will be need for additional retail and service uses to meet the needs of the new residents. As was briefly mentioned in the existing land use narrative, lessons from the past are learned and the existing strip-type commercial should not be duplicated in the future. Instead, **community commercial** areas should be concentrated along specific nodal points (intersections) on major thoroughfares, and possibly these nodal commercial areas be connected to the residential areas by bicycle/pedestrian trails reducing the need for the automobile. These community commercial areas have been recommended in the Future Land Use Plan on Highway 96, Highway 127, Highway 247, and Perry Parkway, US 41 at Dunbar Road, White Road, and Saddle Creek Road. The only "strip commercial" suggested in the Future Land Use Plan is along Highway 49 near Byron. It is strongly suggested that in this area, a design plan be developed to give specific details on how this area should be developed, and an overlay district be established along this corridor to implement this design plan.

In addition to those that currently exist, there will be a demand for large commercial areas that serve a regional market or interstate travelers. To satisfy this demand, the future land use plan has identified certain areas of the WRATS Study Area for **regional commercial** use. Most of the new regional commercial areas are expected to occur at or near the Highway 247 Connector and Russell Parkway Extension Corridors from Highway 41 to Interstate 75, and in close proximity to the Highway 49/I-75 interchange in Byron. Regional Commercial uses have also been identified for Highway 96 near Houston Lake Road and Russell Parkway close to its intersection with South Davis Drive. As has been expressed throughout this report, it is strongly encouraged that these new regional commercial uses not stand alone, but instead be connected with other uses, such as residential and light industrial uses to provide work, live, and shop environments that will entice new residents and create alternatives to sprawl.

The Cities of Byron and Perry are the two communities in the WRATS Study Area that have definable **Central Business Districts**. The City of Byron is a Better Hometown Community and as result of this designation, has a committee that works on different aspects to improve the downtown area, including design, marketing, and accessibility. In addition, the Byron Better Hometown Committee receives technical assistance from the Georgia Department of Community Affairs and the University of Georgia when requested. During the development of the Regional Bicycle/Pedestrian Plan, the RC staff met with representatives from the Byron Better Hometown Program to discuss bicycle/pedestrian access to their downtown. As a result of these discussions, a plan was developed to construct new sidewalks and allow for improved bicycle accessibility through shared-lane facilities.

The City of Perry has hired a Main Street Coordinator and has taken great strides in providing a quality downtown area for its residents and visitors. One of these improvements includes increasing accessibility for pedestrians and bicyclists. As a result of TE grant, facility improvements are being made along General Courtney Hodges Boulevard to provide greater pedestrian/bicyclist access between the Georgia National Fairgrounds and Agricenter and the downtown area. It is hoped that through these facility improvements, visitors to the Agricenter will be encouraged to walk or ride a bicycle instead of taking an automobile to downtown. In addition to this specific improvement, the City of Perry has an ambitious plan to establish a shared-use trail system throughout the entire community that will connect to the downtown area.

A resource team from the Georgia Department of Community Affairs prepared a report outlining recommendations to revitalize the older commercial and residential areas of the City of Warner Robins and to encourage infill development. One of the recommendations was related to the Commercial Circle area, which at one time was the "CBD" of Warner Robins. A satellite campus of Middle Georgia State University sits in close proximity to Commercial Circle. It is believed that this will leverage future construction and renovation in the area and an opportunity for Commercial Circle and the neighboring commercial areas to again be the center of a Warner Robins downtown.

Industrial

Recent newspaper articles have decried the lack of new industrial development in portions of the WRATS Study Area. It is very clear that industrial development has taken on a very different appearance than it did 20 or 30 years ago. Though there have been some recent developments related to new heavy industrial expansion over the last several years, and certainly there will be some additional land needed for new or expanded heavy industrial use over the planning period, the movement has been to accommodate light industrial and wholesale/warehousing type activities. Studies completed on the diversification of the area's economy confirm this trend and recommend new industries that will create quality jobs, take advantage of resources and technologies that are located within the study area, increase the tax base, while at the same time having little or no impact on the area's environment.

Realizing this fact, local planners are recommending three new **light industrial** areas for the WRATS Study Area and suggesting two existing industrial areas move in this same direction. The three new areas are the I-75 Corridor between White Road and Russell Parkway Extension, the redevelopment of an old commercial use area along Highway 247 north of Watson Boulevard, and the third is part of an existing technology park which takes advantage of the university research centers already in the park. The first is located next to a major highway providing interstate connections and would be excellent for warehousing or other light industries that need interstate access or high visible exposure. The second provides an outstanding location next to Robins Air Force Base which should attract new light industrial uses that would benefit from such a location. One recent success at this second location is the proposed GRAMP project, a joint development by Robins Air Force Base and the City of Warner Robins. The proposed project includes the construction of an approximately 420,000 square foot aerospace industrial complex on approximately 90 acres of land owned by the City of Warner Robins adjacent to Robins AFB. The proposed complex will facilitate a Public-Private Partnership between the Warner Robins Air Logistics Center (WR-ALC) and private industry to share weapon system sustainment capabilities in order to improve aircraft availability and reduce costs. The third location would take advantage of the university research centers already in the park. New, small light industrial uses could utilize the research and development technologies from these centers and manufacture items based on these new technologies.

The two existing industrial areas being proposed to move in this direction are located in the City of Perry; the Perry Industrial Park off Valley Drive and the Airport Industrial Park just off I-75/Thompson Road interchange.

Heavy Industrial uses have not been forgotten in the Future Land Use Plan. In addition to the current Frito-Lay, Medusa, and Perdue Farms sites and the heavy industrial area off Jernigan Street, the Plan calls for the expansion of the Warner Robins Industrial Park west of its current location off Booth Road.

It is in all likelihood that future light and heavy industrial sites will gain additional attention during future local comprehensive planning processes in both Houston and Peach Counties. As discussions take place with local economic and policy officials and citizens during this process, the locations of future industrial areas and the types of uses allowed in those areas may change. This narrative was an attempt to establish an initial discussion point for all concerns.

4.2.3 Corridor Area Perspective

Along with looking at future development for the WRATS Study Area as a whole, a future land use plan has been developed for fifteen (15) corridors that will experience significant land use changes and impacts to the surrounding transportation network caused by these changes over the course of the planning period. This section provides an overview of the recommended future land use, highway projects that have been identified in the WRATS 2040 Long-Range Transportation Plan, pedestrian/bicycle facilities recommended in the Regional Bicycle/Pedestrian Plan, and other transportation issues and recommendations.

The corridors that were identified in the future land use plan include:

- Corridor 1: US 41 - North County Line to Perry City Limits
- Corridor 2: Highway 96 - I-75 to Ocmulgee River
- Corridor 3: Highway 127 - Houston Lake Road to SR 247
- Corridor 4: Highway 127 - Perry Parkway to Houston Lake Road
- Corridor 5: Highway 247 - Highway 96 to Highway 247 Spur
- Corridor 6: Dunbar Road/Elberta Road - Highway 41 to Highway 247
- Corridor 7: Perry Parkway - US 341 to Highway 224
- Corridor 8: Highway 341S - Perry Parkway to Highway 247 Spur
- Corridor 9: Highway 41S - Perry Parkway to Fire Tower Road
- Corridor 10: Kings Chapel Road - Highway 127 to Arena Road
- Corridor 11: Saddle Creek Road - Highway 341 to Highway 247
- Corridor 12: I-75 Frontage - SR 96 to White Road
- Corridor 13: Dunbar Road West - Highway 41 to I-75 and Highway 49
- Corridor 14: White Road - Highway 49 to Highway 41
- Corridor 15: Highway 49 - White Road to Highway 41

Corridor 1: US 41 - North County Line to Perry City Limits

- Future Land Use
  - Residential development will consist of urban residential uses. Considerable amount of vacant land exists in this corridor and provides great opportunity of infill development.
  - Commercial uses will be primarily community commercial along Highway 49, White Road/Thomason Road intersection, and near the Perry Parkway; regional commercial uses along Highway 247 Connector and Russell Parkway Extension.
- Transportation Issues and Recommendations

- The LRTP recommends a long-range project from Highway 49 to Russell Parkway; and illustrative projects from Russell Parkway to Mossy Creek, and from Mossy Creek to Highway 127, should additional funds become available.
- The WRATS Bicycle and Pedestrian Facilities Plan recommends signage in the short-term and 4' bike lane in the long-term.
- Numerous ingress/egress points on this major thoroughfare create serious conflicts with through traffic. Suggest greater access control along this corridor once the vacant parcels are developed.

Corridor 2: Highway 96 - I-75 to Ocmulgee River

- Future Land Use
  - Residential development will be urban residential uses.
  - Commercial development will be community commercial between Lake Joy Road to Houston Lake Road, and the Moody Road and Highway 247 intersection; regional commercial east of Houston Lake Road.
  - Great potential for a character area; with an excellent design concept, the existing residential, institutional, and commercial developments and vacant parcels can be transformed into a showcase mixed-use area connected by bicycle/pedestrian trail system, not to mention that the corridor has two outstanding anchors; I-75 and the Ocmulgee River.
- Transportation Issues and Recommendations
  - LRTP recommends a short-range project on Highway 96 from Old Hawkinsville Road to Highway 87 in Twiggs County. In conjunction with the Highway 96 projects already under construction this will complete Highway 96 as a four lane road from I-75 to Highway 87, and eventually I-16. These projects are already programmed in the TIP.
  - The WRATS Bicycle and Pedestrian Facilities Plan recommends signage and four-foot bike lane in the short-term. The sections of Highway 96 currently under construction will include bike lanes.

Corridor 3: Highway 127 - Houston Lake Road to Highway 247

- Future Land Use
  - Residential development will be exclusively urban residential uses.
  - Community commercial development will be at the intersections of Houston Lake Road, Talton Road, and Highway 247.
  - Light industrial use will continue near the intersection of Highway 247.
  - Excellent potential character area; can benefit from a good design scheme where a current beautiful rural/suburban setting begins to transition to more intense urban uses over the planning period.
- Transportation Issues and Recommendations
  - LRTP recommends an illustrative project from Moody Road to Highway 247.
  - WRATS Bicycle and Pedestrian Facilities Plan recommends a four-foot bike lane in the long term.
  - Considerable amount of vacant land in the corridor provides opportunities for new residential subdivisions, thus access to these new subdivisions from this major thoroughfare should be monitored closely in the future to maintain proper traffic flow.

Corridor 4: Highway 127 - Perry Parkway to Houston Lake Road

- Future Land Use
  - Residential use projected to be urban residential.
  - Office use planned near the Perry Parkway, with community commercial limited to the intersection of Houston Lake Road.
  - Excellent potential character area; unlike Corridor 3 to the east, Corridor 4 will see the transition to urban uses much sooner, thus will need a good design plan to avoid the situation that has occurred along Watson Boulevard and Russell Parkway to the north.
- Transportation Issues and Recommendations
  - The WRATS Bicycle and Pedestrian Facilities Plan calls for sidewalks and bike signs in the short-term and four-foot bike lane in the long-term. Sidewalks have recently been constructed along Moody Road.
  - The key is to protect this LOS throughout the planning period while this corridor experiences enormous change in land use development. That is an important reason for effective access control and land use design plan along the corridor.

Corridor 5: Highway 247 - Highway 96 to Highway 247 Spur

- Future Land Use
  - Residential use is expected to be urban residential.
  - Community Commercial will be located near Highway 96, along Highway 247 south of Highway 96, and at the intersection of Highway 127.
  - Heavy industrial use will likely remain east of Highway 247 and south of Oakey Woods Road (Frito-Lay)
- Transportation Issues and Recommendations
  - LRTP recommends an illustrative project from SR 96 to SR 247 Spur.
  - No bicycle/pedestrian facilities are planned for this corridor.

Corridor 6: Dunbar Road/Elberta Road - Highway 41 to Highway 247

- Future Land Use
  - Urban residential uses are planned for this corridor.
  - Community commercial has been recommended for the intersections at North Houston Lake Road, Carl Vinson Parkway, Sullivan Road, North Houston Road, Highway 247, and several other parcels scattered throughout the corridor.
  - Light industrial will continue at the intersection of Carl Vinson Parkway, between Sullivan and Fairgrounds Road, and at the intersection of Highway 247.
  - Outstanding potential for character area between Highway 41 and General Lee Road - It is an absolutely stunning area with its outstanding scenery and peaceful rural character. Because of its intrinsic beauty, this section of Dunbar Road will come under enormous pressure to transition from rural to urban residential. It is crucial that during the comprehensive planning process, a closer look needs to be taken on how the transition in uses can take place, while at the same time protecting the area's outstanding natural beauty.
- Transportation Issues and Recommendations

- LRTP recommends an illustrative project the Dunbar Extension from US 41 to Dunbar Road; mid-range project Dunbar Road from Houston Lake Road to North Houston Road; a short-range SPLOST project on Elberta Road from North Houston Road to SR 247; mid-range project on Elberta Road from Carl Vinson Parkway to North Houston Road; and an illustrative project Dunbar Extension from Elberta Road to SR 247.
- The Regional Bike/Pedestrian Plan does not recommend any bicycle/pedestrian facilities for this corridor. This would be an excellent corridor to provide new bicycle/pedestrian facilities and should be given a close review during the local comprehensive planning process. If the comprehensive plan does recommend new bicycle/pedestrian facilities along this corridor, then the Regional Bike/Pedestrian Plan should be amended accordingly.
- With the extensive amount of vacant land available along Dunbar Road for residential use between US 41 and Carl Vinson Parkway, future road improvement plans should take a very close look at access control to insure adequate traffic flow and LOS on what will become a very important major thoroughfare in the future.

Corridor 7: Perry Parkway - US 341 to Highway 224

- Future Land Use
  - Most of the land from Highway 41 to Highway 341 and from Highway 341 W to Highway 224 is planned for urban residential uses.
  - Office uses are being recommended south of Kings Chapel Road, south of Houston Lake Road, and between Houston Lake Road and US 41.
  - Community Commercial is planned for the intersections of Highway 41, Thompson Road, Airport Road, Highway 341 W and Highway 341; with several other community commercial parcels scattered along the Parkway.
  - Light industrial use is expected to take place in this corridor off of Thompson Road, Airport Road, and Valley Drive.
  - The Parkway is in need of a development plan that will shape the overall character of the area, provide a variety of uses that can be linked together into a cohesive unit, establish it as an important gateway into the City of Perry, and also protect the Parkway as an important transportation artery moving vehicular traffic through and around the City. The Parkway Corridor can actually be divided into three separate character areas using the locations described above, while blending the areas together into one coordinated plan for the Parkway.
- Transportation Issues and Recommendations
  - The LRTP and the Regional Bike/Pedestrian Plan recommend completion of Perry Parkway to Highway 224/127.
  - A system of bicycle/pedestrian trails should be investigated as part of the design concept for the Parkway so as to promote connectivity between the various uses and with the shared-use trail system under development in the City of Perry.

Corridor 8: Highway 341 S - Perry Parkway to Highway 247 Spur

- Future Land Use
  - Urban residential uses are planned with the exception of community commercial uses at the intersection of Perry Parkway and Arena Road and heavy industrial uses at the intersection of Highway 247 Spur.

  - Possible character area realizing residential development will likely expand, and connections can be established with the industrial areas, the Houston County Government Center on Perry Parkway located just north of the corridor, and other uses that will likely occur along the Parkway.
- Transportation Issues and Recommendations
  - LRTP recommends a long range project from Arena Road to Grovania Road and a long-range project from Langston/Arena Road from SR 127 to US 341. (This will become part of a new major east-west connector road that will tie into the proposed Todd Road Extension to US 41.)
  - Though no bike/pedestrian facilities have been recommended in the Regional Bike/Pedestrian Plan, this corridor would be an excellent candidate for such a facility that connects with a possible trail system along the Parkway and along the new Todd Road Extension. If recommended by the local comprehensive plan, the Regional Bike/Pedestrian Plan should be amended accordingly.

Corridor 9: Hwy 41 S - Perry Parkway to Fire Tower Road

- Future Land Use
  - Most of the future development will take place south of Hay Drive; urban residential will occur between Hay Drive and Moss Oaks Drive, while south of Moss Oaks Drive, residential use will be suburban in character; community commercial will be isolated to a few scattered parcels; the new state park will likely be completed during the planning period. North of Hay Drive, new development that is expected to take place is continued expansion of the Georgia National Fairgrounds and Agricenter, and community commercial near the interstate.
  - Possible character area would be the area south of the Agricenter to Fire Tower Road. There will be a need to establish a development plan that would provide a smooth transition of uses from rural to urban and incorporate a design concept that would blend well with the new state park.
- Transportation Issues and Recommendations
  - LRTP does not recommend any improvements for this corridor.
  - Traffic conditions will have to be monitored closely when the state park becomes fully operational to determine if the LOS becomes worse than projected and improvements needed. Another unknown is the impact of the planned Agricenter convention center hotel and additional expansion of the Agricenter itself.
  - Regional Bike/Pedestrian Plan recommends a four-foot bike lane along this corridor that connects with the City of Perry's shared use trail system. It is recommended that rather than the bike lane, the shared-use trail system should be extended to at least the new state park to accommodate pedestrian as well as bicycle traffic from the City and the Agricenter. If the local comprehensive plan concurs with this recommendation, the Regional Bike/Pedestrian Plan should be amended to reflect this change.

Corridor 10: Kings Chapel Road - Highway 127 to Arena Road

- Future Land Use
  - The dominant land uses in this corridor during the planning period is anticipated to be urban residential.

- The State of Georgia, Houston County, and the Houston County Board of Education are expected to maintain a large presence in the corridor with various public/institutional uses.
- Office and community commercial uses will occupy parcels along the Perry Parkway and Kings Chapel Road.
- Possible character area would be section east of Perry Parkway to ease the transition from rural to urban uses and to review ingress/egress points along Kings Chapel Road so as not to interfere with the flow of traffic along this major thoroughfare.

- Transportation Issues and Recommendations
  - LRTP recommends an illustrative project from SR 127 to Arena Road.
  - This corridor, as with several of the other corridors mentioned earlier, lends itself well to a planned bicycle/pedestrian trails system that connects the new residential areas to themselves, Rozar Park, Morningside Elementary, and the employment centers along Kings Chapel Road and Perry Parkway.

Corridor 11: Saddle Creek Road - Highway 341 to Highway 247 Spur

- Future Land Use
  - Urban residential uses are planned for most of this corridor.
  - Community commercial development is expected to occupy several nodal points along Arena Road and SR 247 Spur.
  - Heavy industrial uses will continue near the Highway 247 Spur.
  - Because of the extensive amount of vacant land that is available, this corridor is a prime candidate for character area designation, which can look into the possibility of transforming this area into a mixed-use village or a similar concept.
- Transportation Issues and Recommendations
  - Because of the area's extensively rural character and the relatively low traffic volumes on Saddle Creek Road, the LOS has not been identified for this corridor in the 2010 and 2040 Networks. Its potential as an important collector road between two major arterial highways and the anticipated transition to urban development along the corridor will require a close review of its LOS during the planning period. Regulating the ingress/egress points from the various developments that will occur in the area will help maintain a good flow of traffic and LOS.
  - Any development plan for this area should include a provision for a coordinated bicycle/pedestrian trail system.

Corridor 12: I-75 Frontage - SR 96 to White Road

- Future Land Use
  - Urban residential uses will occupy selected locations along the corridor; between Russell Parkway and Highway 96 and between White Road and Red Oak Drive.
  - Regional commercial uses will dominate near the interstate interchanges along the SR 247 Connector and Russell Parkway Extension.
  - North of the regional commercial, light industrial uses are planned.
  - This is a definite character area for the local comprehensive plan. It will be an incredible challenge but will also create incredible possibilities in designing three gateways to the WRATS Study Area that will leave lasting impressions on thousands of people.

- Transportation Issues and Recommendations
  - LRTP recommends a long-range project on I-75 from Bibb County Line to SR 247C/Watson Boulevard and illustrative projects from SR 247C/Watson Boulevard to Perry Parkway including Highway 96.
  - Design plans for this corridor should examine possible bicycle/pedestrian system that will connect the residential, commercial, and industrial uses.

Corridor 13: Dunbar Road West - Highway 41 to I-75 and Highway 49

- Future Land Use
  - This corridor will continue to be developed with a variety of uses; urban residential, community commercial, and light industrial. The public/institutional uses (Byron Public Works and UGA Fruit and Nut Research Center) are expected to remain in the future.
- Transportation Issues and Recommendations
  - LRTP recommends an illustrative project from SR 49 to US 41 that includes a new bridge over I-75 and alignment along New Dunbar Road
  - The Regional Bike/Pedestrian Plan does not recommend any bike/pedestrian along this corridor.

Corridor 14: White Road - Highway 49 to Highway 41

- Future Land Use
  - Bordering Highway 49 in Byron will be predominately community commercial uses.
  - Between the commercial uses on Highway 49 and Interstate 75, the future land use plan recommends a mixture of urban residential, light industrial, and public/institutional.
  - On the east side of I-75, light industrial uses are expected with urban residential continuing along White Road until US 41.
  - At the intersection of White Road and US 41, community commercial is planned for several of the corners with urban residential occupying the remainder.
- Transportation Issues and Recommendations
  - LRTP recommends a mid-term project on White Road/Thomson Road from SR 49 to SR 11/US41. This is due to the importance of White Road as a connector between Byron and Warner Robins, anticipated development, and projected future LOS issues.
  - The Regional Bike/Pedestrian Plan recommends a shared roadway bike facility and sidewalks from SR 49 to the Byron Middle School (short-term); from the middle school to the subdivision just across the interstate would be a shared-use trail, and the remainder would be a four-foot bike lane (long-term).

Corridor 15: Highway 49 - White Road to Highway 41

- Future Land Use
  - The corridor will continue to have three distinct land use sections during the planning period: (1) White Road to Interstate 75 - includes regional commercial uses such as those that serve the highway traveling public coming from the Interstate along with the regional specialty mall, community commercial that serves residents in Byron and the surrounding area, and several urban residential subdivisions and public/institutional uses; (2) West of the Peach Outlet Mall to Highway 49 - includes several urban

residential subdivisions, the UGA Fruit and Nut Research Center, and community commercial uses; and (3) Intersection around Highway 41 - combination of urban residential, community commercial, and public/institutional uses.

- Transportation Issues and Recommendations
  - LRTP recommends a short-range improvement project from Byron to US 41 and a TSM project on Highway 49 in Byron.
  - The Regional Bike/Pedestrian Plan does not recommend any bicycle/pedestrian facilities for this corridor.

4.3 Future Land Use Policies

This section is intended to provide a link between what is occurring today as described in the previous section and what will hopefully be in the future as outlined in the section that follows. Providing this link are policy statements that relate to the future development of land in the WRATS Study Area, the relationship land use development has with the natural environment and public infrastructure including water, sewer, and the transportation network. It is desirable that these policies be adopted by the respective member governments of WRATS in order to insure a satisfactory implementation of the land development recommendations in this report.

The policy statements presented below were in large measure derived from discussions with local planning and zoning officials during a retreat in July 2005. In these discussions, the participants were asked to comment on general land use and infrastructure policy statements. The participants in the retreat were also given an assignment to identify actions related to land use development that should be stopped or changed, continued, and started. This exercise generated some very interesting and informative discussions and revealed many issues that need to be addressed in the policy statements. In addition to input obtained at the Planning Retreat, ideas outlined in the natural and historic resources, community facility network, and existing land use sections of this report were used to help formulate these policy statements. For clarity, the recommended policy statements have been placed under the following headings: land use development and natural/historic resources; land use development and water/sewer infrastructure, land use development and transportation infrastructure, land use development coordination, and general land development issues.

4.3.1 Land Use Development and Natural/Historic Resources

- Protect sensitive natural resources, such as wetlands, groundwater recharge areas, river corridors, and floodplains through the establishment of greenspace areas, and the development of conservation subdivisions.

- Conduct a study on the alternatives to protect the water quality in the Study Area's streams, with particular attention to those listed on the EPA 303 (d) list. Amend the land development regulations accordingly. Alternatives that should be given consideration include buffers or setbacks from all perennial streams and targeted percentages of impervious surface in the affected watershed.

- Complete necessary repairs on the Phase I section of the Wellston Path, and complete all remaining phases of the path within the next five years.

- Conduct historic resource surveys in the remaining jurisdictions in the Study Area to determine those historic resources that should be protected and promoted.

- Amend land development regulations to require the submittal of landscape plans for certain types and sizes of developments.

4.3.2 Land Use Development and Water/Sewer Infrastructure

- Future land development should maximize existing water and sewer infrastructure as much as possible before expansion of such infrastructure occurs.

- When expansion of the water and sewer infrastructure does occur, it should go along with the phased expansion of the urban development boundary.

- New residential developments should be encouraged to locate where sanitary sewer service exists instead of developing new septic tank systems.

4.3.3 Land Use Development and Transportation Infrastructure

- Future land use development in the WRATS Study Area should not worsen the Level of Service shown in the Year 2040 Network 5.

- Future 2040 highway network in the WRATS Study Area should be coordinated with the Future Land Use Plan, rather than the future development plan having to be tailored to meet the future highway network.

- Establish under the umbrella of WRATS, a common major thoroughfare system that each community adopts into their land development regulations and is coordinated with the setback requirements.

- Future land use development patterns should take into account the development of bicycle and pedestrian facilities that will encourage more citizens to walk or ride a bicycle to work, shop, or school. Sidewalks and bicycle paths should relate to specific pedestrian and bicycle corridors that are recommended in the community's comprehensive plan. (NOTE: some of these corridors are recommended in Existing Land Use Section of this report under Corridor Area Perspective.)

- Require traffic impact analysis for all new major developments.

4.3.4 Land Development Coordination

- Establish a coordination process with Houston County and Peach County Boards of Education during development of the local comprehensive plans and during the zoning review process of major developments.

- Establish on-going educational program with builders and developers on new development techniques, such as, conservation subdivisions and other methods to protect wetlands and other sensitive natural resources on the property, incorporating bicycle/pedestrian paths and other user-friendly amenities into new residential developments, mixed-use villages and centers, and other New Urbanism ideas.

4.3.5 General Land Development Issues

- Consider the impact of the surrounding neighborhood when making decisions on major developments.

- Establish common areas near high density residential developments for passive and active recreation purposes.

- Reduce the number of entrances for new subdivisions to the absolute minimum needed for safety and adequate ingress/egress.

- Establish more connectivity to residential neighborhoods, one example is to provide for the Traditional Neighborhood Design concept in the land development regulations.

- Promote neighborhood-oriented businesses near residential area, mixed-use villages and centers.

- Require access easements for subdivision frontage lots at the time of platting.

5 Transportation Needs

Transportation needs for the WRATS LRTP were identified from a variety of sources by looking as described in previous sections at existing transportation system operations, current and anticipated land use development, existing modal plans for transit and bicycle and pedestrian infrastructure, planned road and bridge projects, public and stakeholder comment, stakeholder interviews, the transportation issues survey, and discussions and input from WRATS member jurisdictions. Travel demand modeling and analysis of current and projected roadway level of service helped to determine and prioritize road and bridge needs.

Since the last LRTP a number of road projects have been completed or are underway. Especially significant are SR 96 – which should have a positive impact on freight travel and includes bike lanes, and the SPLOST projects which have improved vehicular travel and generally include sidewalks that enhance arterial mobility for pedestrians. Although there is still no public transit service, a WRATS Transit Feasibility Study was completed in 2012 and there are ongoing discussions between local jurisdictions and stakeholder groups as to how best to implement transit service. Houston County renewed its SPLOST in 2012 committing 27% of a projected $155 million to transportation improvements. Road maintenance, safety, and operations remain comparatively good at a regional level.

Stakeholder comment noted the need to begin a transit service, the need to build new roads or widen existing roads to accommodate new development, improving operation of the existing road system – particularly SR 247C/Watson Boulevard, Russell Parkway, SR 96 and SR 247 – and to construct additional sidewalks and bicycle facilities. The Stakeholder Interview Summary is presented in Appendix G.

In the Transportation Issues Survey, respondents indicated that the most important transportation problems are lack of transit service, lack of sidewalks, and lack of bicycle lanes and multi-use trails. Most respondents indicated that the safety and condition of existing transportation infrastructure were lesser concerns, likely reflecting the generally safe and well maintained condition of the transportation system. The Transportation Issues Survey is summarized in Appendix H.

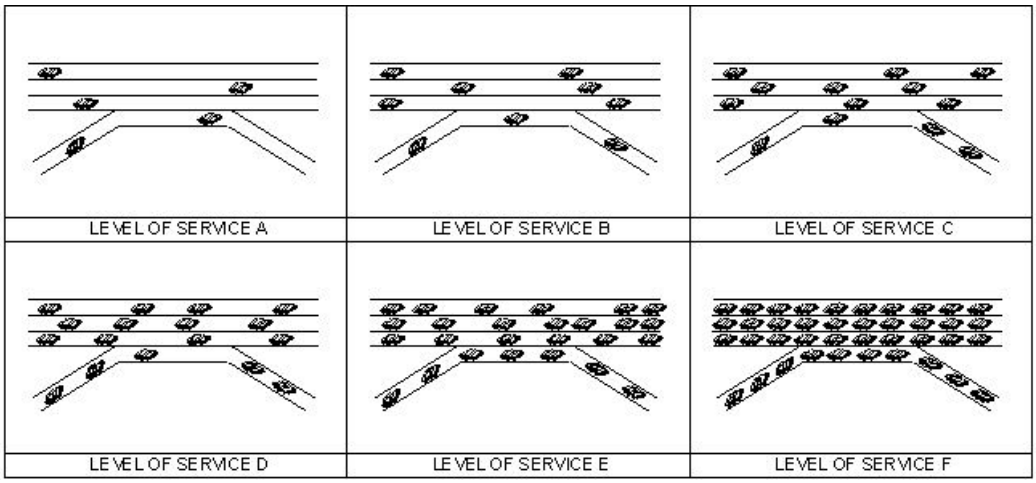
5.1 Roads and Bridges

5.1.1 Existing Conditions

The existing level of service (LOS) for the WRATS transportation network is shown in Figure 5.2. Substandard levels of service are almost all located in northern Houston County primarily in the City of Warner Robins. In general, the existing road and bridge system is in good repair, and relatively safe as illustrated by comparative crash rates and the perception of Stakeholders and respondents to the Transportation Issues Survey. Additional information on existing road and bridge conditions including bridge and pavement condition and crash data can be found in Appendix E.

Figure 5.1 shows a generalized view of roadway level of service. LOS is a letter grade from A through F. LOS A through C represent little or no congestion. LOS D is a generally acceptable level of service in urban areas. LOS E and F are generally unacceptable levels of roadway service in urban areas.

Figure 5.1: Roadway Level of Service (LOS)



Source: Highway Capacity Manual

5.1.2 Needs Analysis

The road and bridge conditions information presented in Appendix E show comparatively few locations with poor pavement or bridges. The section of poor pavement on SR 247 C/Watson Boulevard is programmed to be resurfaced soon. Of the two bridges identified as being in poor condition, one is on a road that is currently closed in an area awaiting redevelopment, the other on SR 247 at Sandy Run Creek will soon be repaired. Information from the Stakeholder Interviews (Appendix G) and the Transportation Issues Survey (Appendix H) indicate that there is little concern with pavement or bridge conditions. However, there is concern with providing new roads and bridges or increasing capacity of existing roads to accommodate new development and preserve a good level of service on the road network.

Table 5.1 shows Motor Vehicle Fatal Crash Rates for the period 2009 -2013. As can be seen the total number of fatal vehicle crashes on an annual basis is declining for both Houston and Peach Counties, as is the rate per 100,000 population. These trends reflect the general reduction in fatal vehicle accidents and the accident rate at the state level. Houston County fatal vehicle crash rates are significantly lower than the state fatal vehicle crash rate. The Peach County fatal vehicle crash rate is slightly higher than the state fatal vehicle crash rate. Information from the Stakeholder Interviews (Appendix G) and the Transportation Issues Survey (Appendix H) indicate that there is little concern with vehicular safety and crashes overall with some exception for specific locations. Most of the transportation concerns expressed by stakeholders and respondents to the transportation issues survey were about mobility. Particularly the need for transit and additional pedestrian and bicycle facilities, but also maintaining relatively high level of service and operations on the regions roads and ensuring adequacy of the road network in advance of new development.

Table 5.1: Vehicular Fatal Crash Data for Houston and Peach Counties 2009 – 2013

	Year					Fatalities Per 100K Population				
County	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Houston	17	18	11	11	7	12.37	12.79	7.63	7.53	4.74
Peach	7	4	3	4	3	25.48	14.40	10.88	14.50	11.11
GA	1,119	1,061	1,082	1,008	975	11.63	10.92	11.03	10.16	9.76

Source: National Highway Traffic Safety Administration

From the transportation modeling process, it is clear that the capacity of several roadway segments in the WRATS area will operate at substandard levels in the year 2040. This is driven by the overall growth and location of growth in the region, the continuing demand for road capacity of automobiles and trucks, and lack of viable transportation alternatives to private vehicles. Figure 5.2 shows the level of service for the roads in the transportation model without any planned improvements (i.e., today's roads with tomorrow's volumes). The existing number of lanes for the roadways in the WRATS network is shown on Figure 5.3.

The acceptable level of service indicated by the modeling process is aimed at eliminating all roadway segments at LOS E and F. However, this is not possible given financial constraints and competing priorities for transportation system investment. There remain segments at LOS E and very limited instances of LOS F, which will provide a diminished mobility in these areas. These segments were reviewed to determine whether to incorporate additional capacity enhancement projects to provide increased mobility along the road segments at or below LOS D. With the exception of I-75, the remaining road segments that operate at LOS D or below are localized issues. These segments might be the result of a generalized network that does not include all roads. Several of these segments would be easily remedied with turning lanes and/or intersection improvements, access management and enhanced traffic signal systems and signal coordination. The current travel demand models do not reflect these types of Intelligent Transportation Systems (ITS), Transportation Systems Management (TSM) and Travel Demand Management (TDM) projects (or the impact of a potential transit system and expanded bicycle and pedestrian facilities). The LRTP should include a generous amount for turning lanes, intersection improvements and other access management or ITS implementation to address these localized deficiencies as needed. These improvements will help to mitigate the need for additional future road capacity and to ensure the desired level of service for the region's road network. In addition, these types of projects assist in implementing goals of the LRTP by enhancing access, mobility and connectivity, and by promoting alternative modes and access to essential services. Most of the ITS, TSM, and TDM projects identified by the plan were developed either by GDOT or local government jurisdictions with responsibility for traffic signal systems and traffic operations.

The obvious exception to a capacity problem that cannot be mitigated exclusively by operational improvements and demand management strategies is I-75. In the current plan, I-75 is widened to 8-lanes from Bibb County to GA 247C/Watson. South of GA 247C/Watson, the interstate remains a 6-lane cross section. With minor exceptions, I-75 operates at LOS D or better. Transportation improvements were developed to address the capacity deficiencies identified in the modeling process. These transportation improvements are shown on Figure 5.4. The LOS on roadways in the WRATS study area with these planned improvements is shown on Figure 5.5. The number of lanes for the improved transportation network is shown on Figure 5.6.

Figure 5.2: Existing Roadway Level of Service (2010)

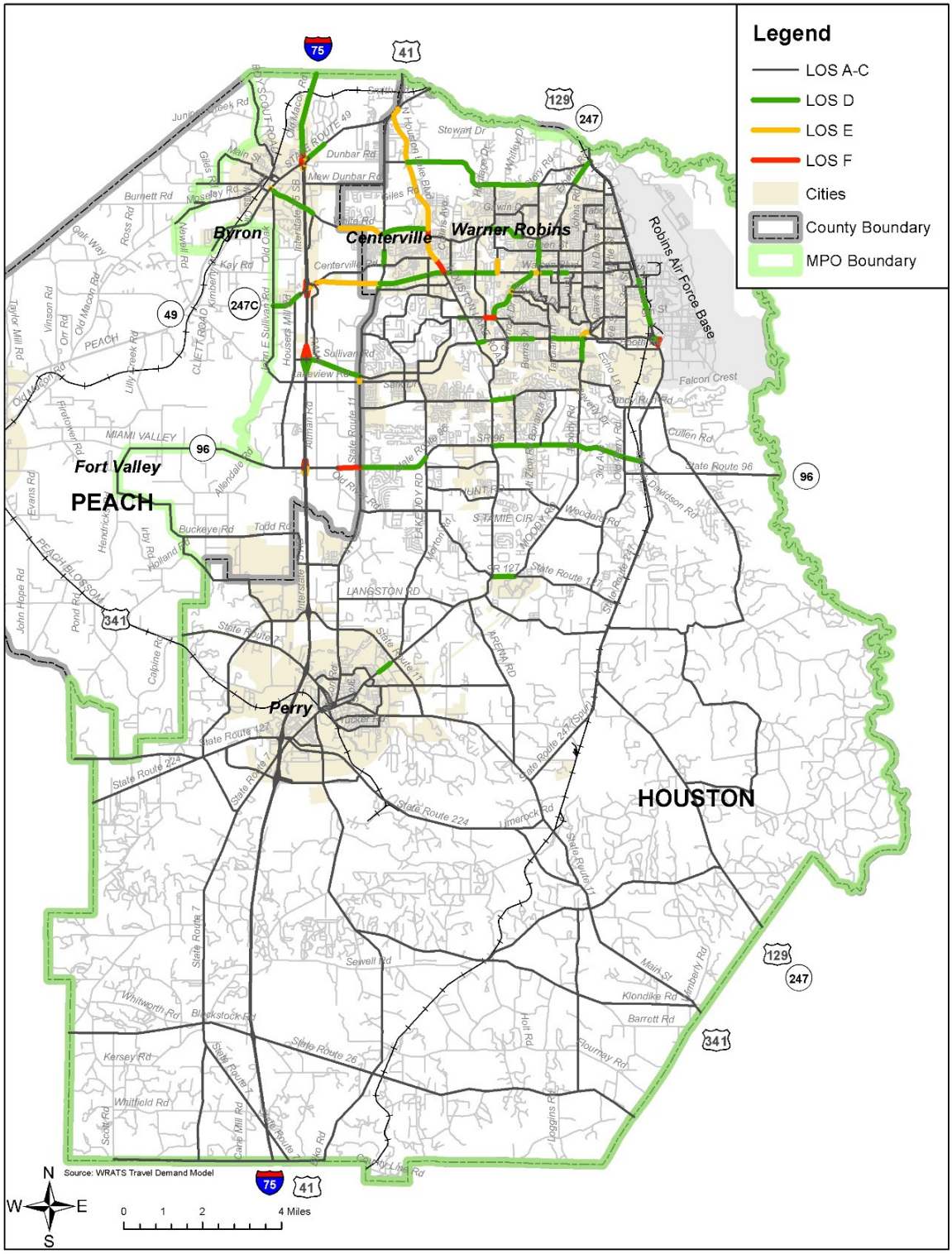


Figure 5.3: Future Roadway Level of Service with No Improvements (2040)

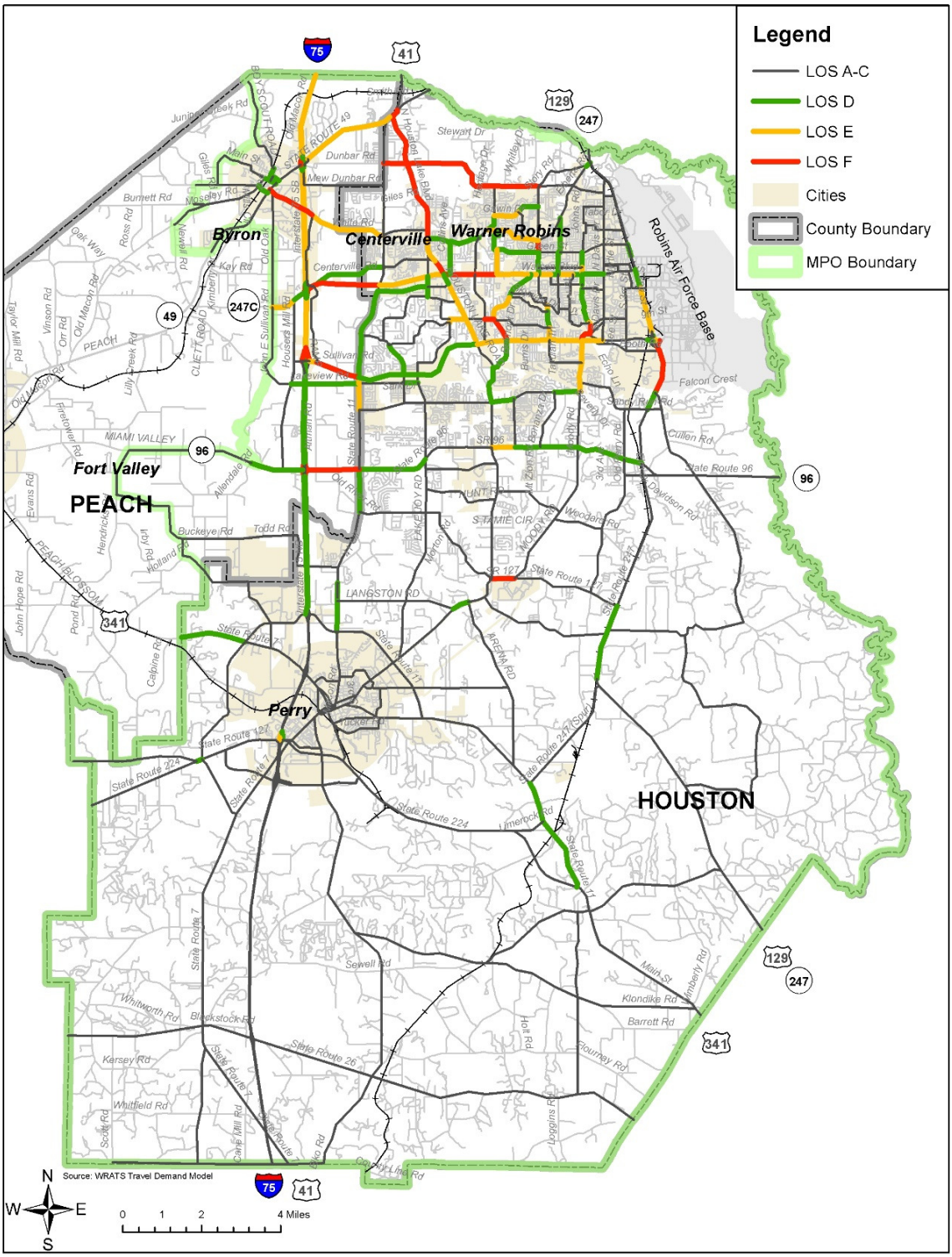


Figure 5.4: Existing Number of Lanes per Direction (2010)

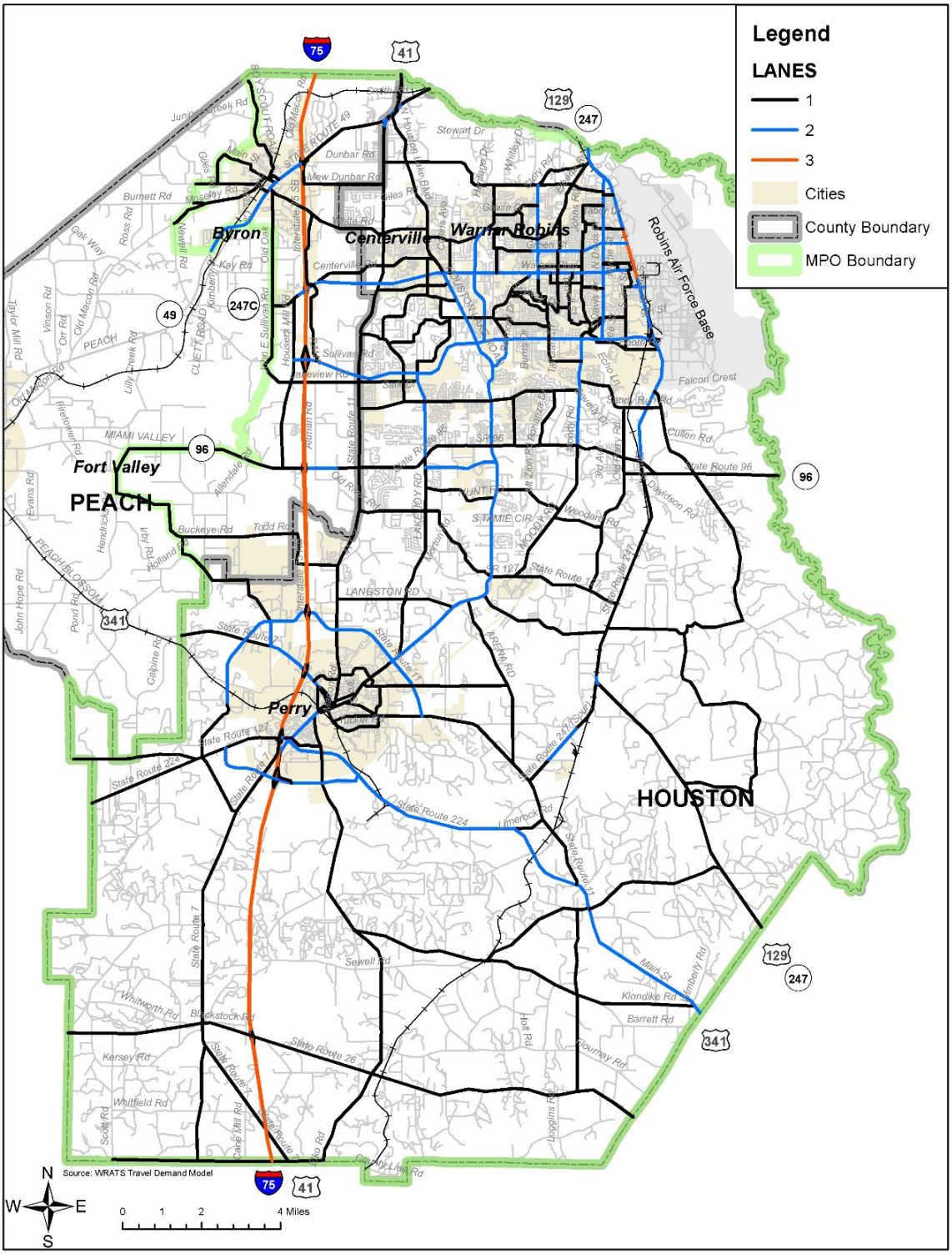


Figure 5.5: All 2040 Planned Road and Bridge Improvements

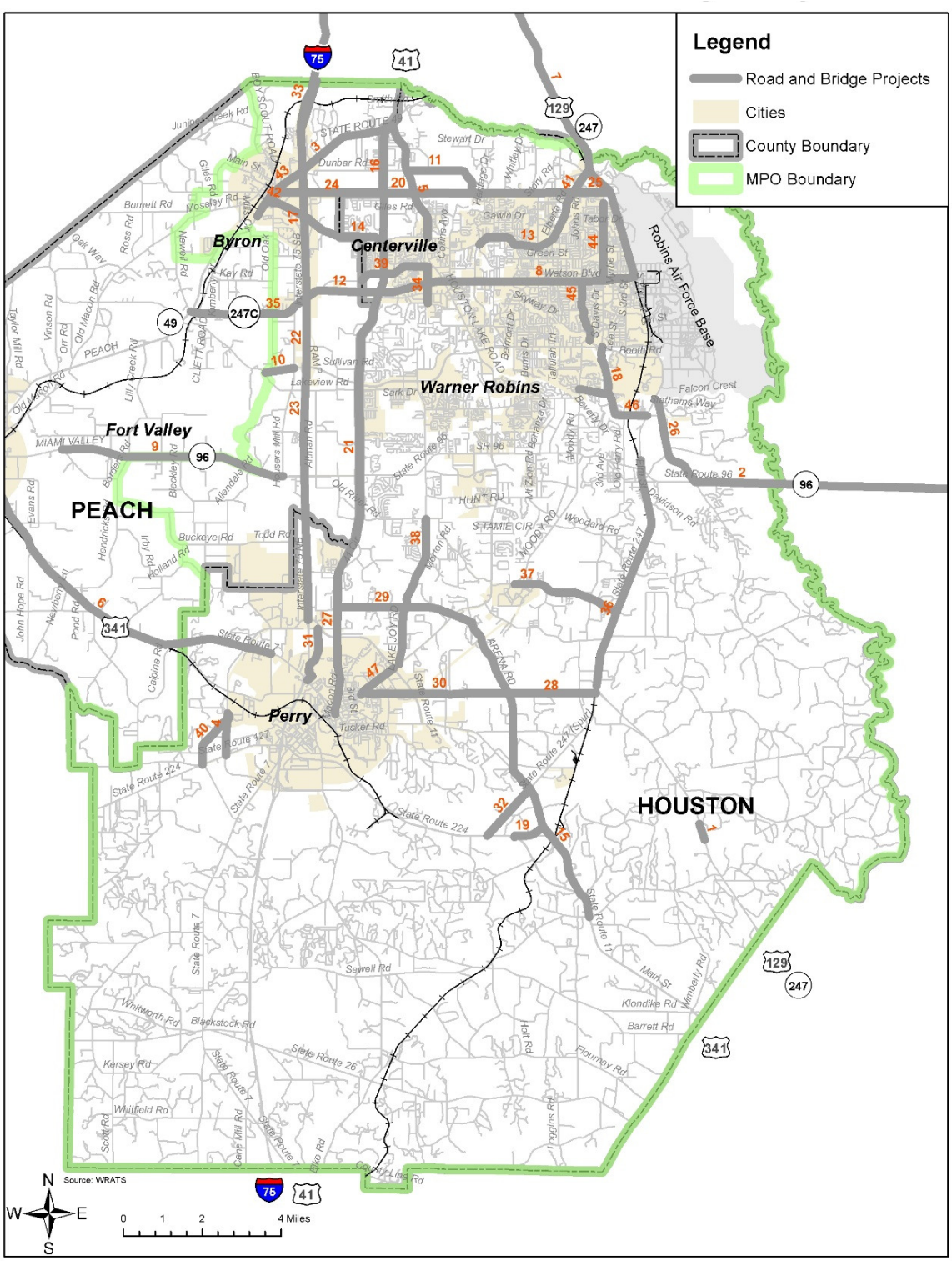


Figure 5.6: Future LOS (2040)

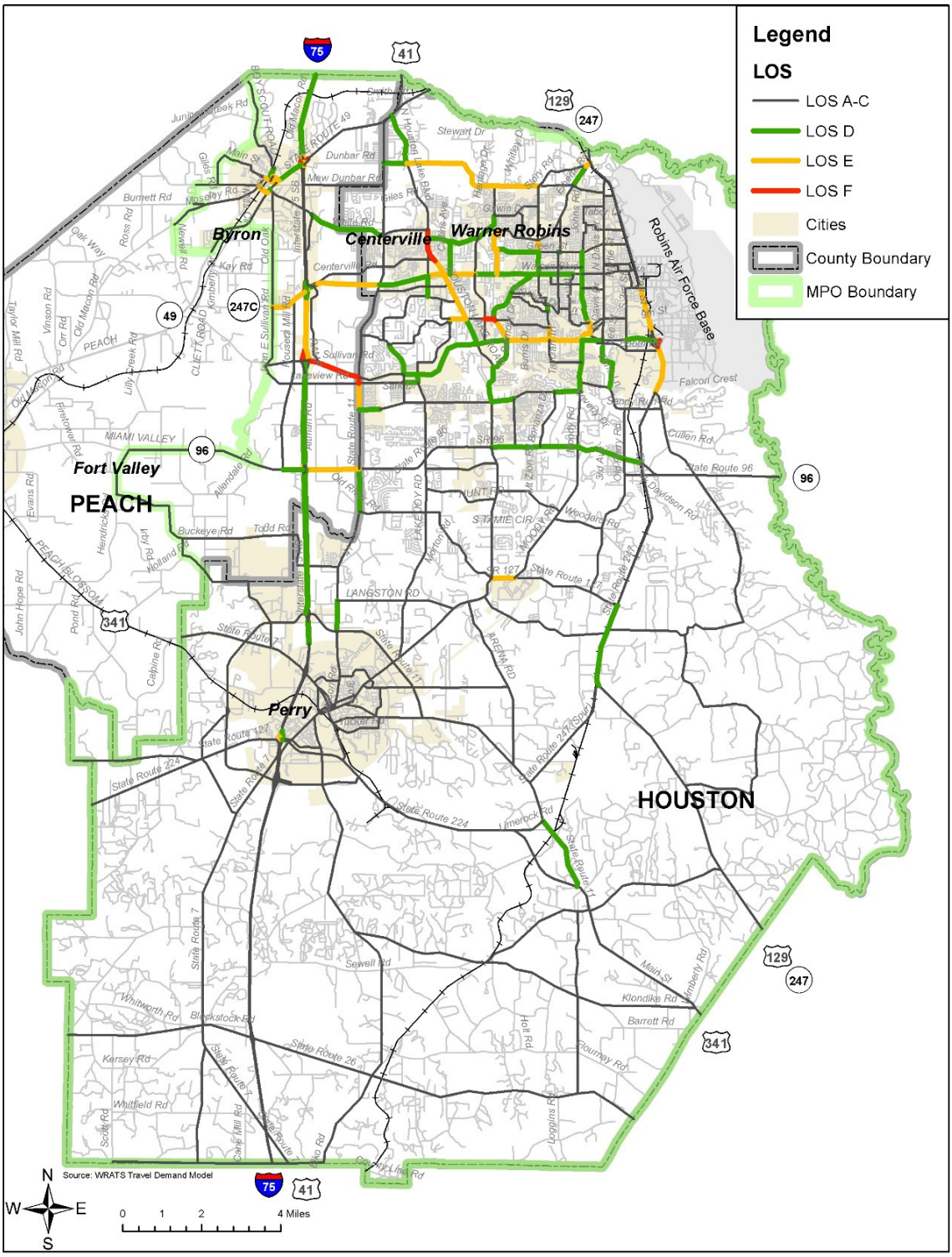
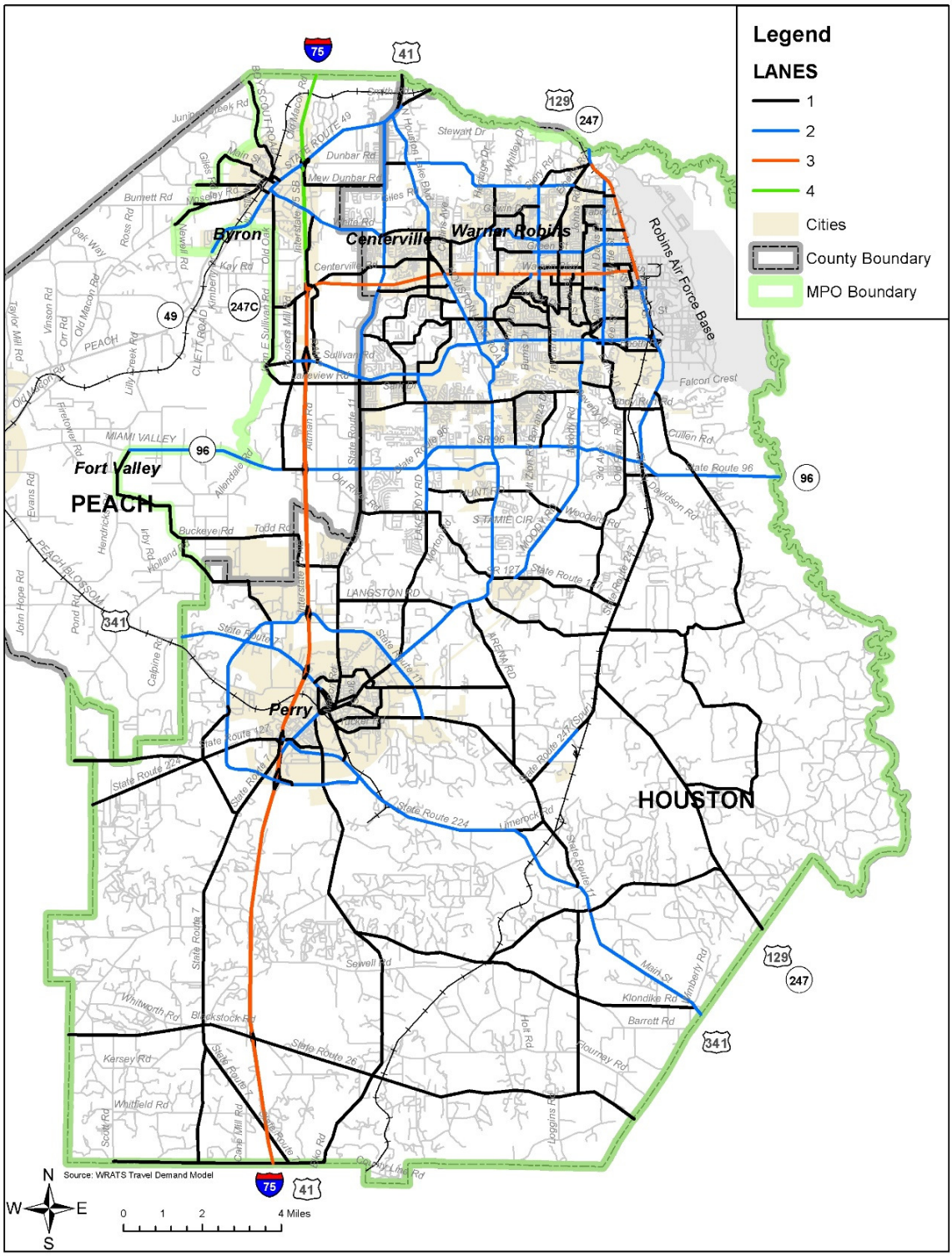


Figure 5.7: Future Number of Lanes per Direction



5.2 Public Transportation

In October 2012, a Transit Feasibility Study was completed for the WRATS.[7] This study looked in detail at transportation disadvantaged communities and potential transit user groups and recommended a phased approach in the implementation of a new public transit system for the Warner Robins area. The transit system recommended by the 2012 transit feasibility study is shown in Figure 5.8. This figure shows the line haul routes and areas to be served by complementary paratransit. In addition to the line haul routes and areas for complementary paratransit services, the transit feasibility study recommended two commuter routes to take employees from Peach and Houston Counties to Robins AFB. These commuter routes are based on the successful BiRD commuter route between Macon/Bibb County and Robins AFB that has been in operation since 2010. The combined capital and operating costs associated with the recommended system are approximately $2.7 million per year during the first five years of the systems operations with average weekday ridership, as shown in Table 5.2, estimated at approximately 1,500 for all routes.

At this time, the funding has not been secured as outlined in this study and the initial steps have not been taken to begin this service. The demand for public transit is nearing levels where a public transportation system is on the horizon, but as for an implementation a specific time frame has yet to be identified. Public involvement for the LRTP showed significant interest in expanding and enhancing the paratransit services supplied in the region. In 2010, the Warner Robins urbanized area was among the nation's largest by population with no reported transit service. A business group is currently trying to identify private and public funds that could be used to start initial transit services in Warner Robins.

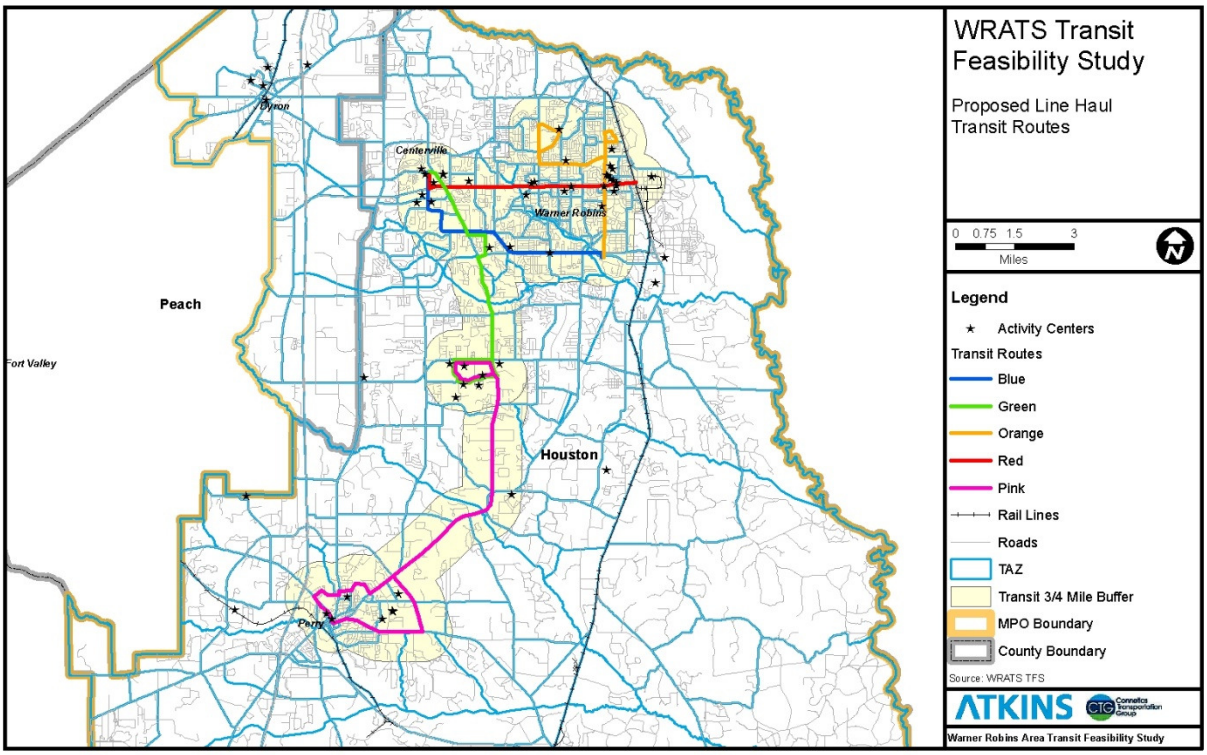
Table 5.2: Transit Ridership Estimates

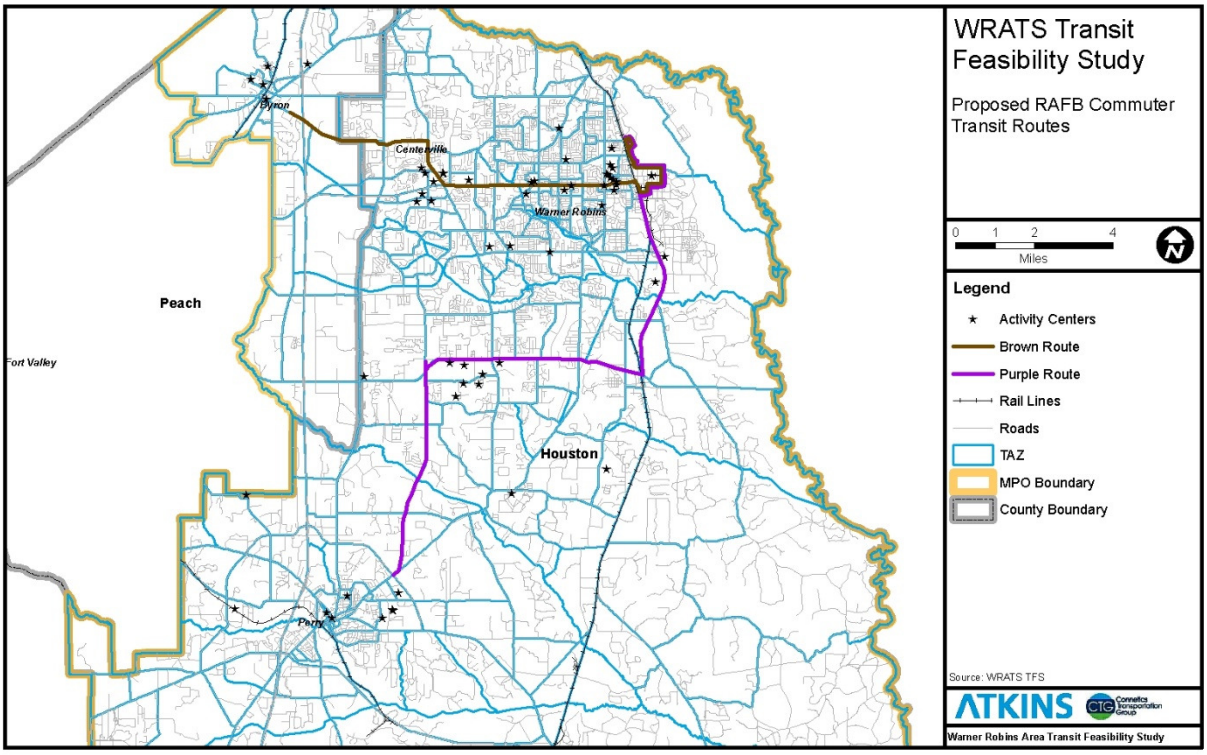
Route Name	Route Description	Ridership Projections		
		Average Weekday Passenger Trips	Passenger Trips per Revenue Hour	Annual Passenger Trips
Brown	Byron-Centerville-RAFB	121	7.6	30,000
Purple	Perry-Lake Joy-RAFB	118	4.9	29,300
Total Express Service		**239**	**6.0**	**59,300**
Red	Watson Boulevard	340	24.3	84,300
Blue	Russell Parkway	230	16.4	57,000
Green	South Houston Lake Road	280	20.0	69,400
Orange	Davis Drive	280	20.0	69,400
Pink	Perry Flex Bus	140	9.3	34,700
Total Local/Flex Route Service		**1,270**	**17.9**	**314,800**
ADA Paratransit Service		33	1.6	8,200
Total ADA Paratransit Service		**33**	**1.6**	**8,200**
System Total		**1,542**	**11.7**	**382,300**

Not having public transit as an option adversely affects area transportation disadvantaged residents who cannot drive, who do not have or cannot afford a private vehicle, or have limited access to private vehicles, by limiting their access to essential services. The LRTP supports development of a public transit system by allocating an expenditure category for transit.

[7] Warner Robins Transit Feasibility Study: Final Report, October 2012 (http://www.wrga.gov/index.aspx?NID=298)

Figure 5.8: Recommended WRATS Transit Routes





5.3 Bicycle and Pedestrian

WRATS completed a Bicycle and Pedestrian Facilities Plan in conjunction with The Middle Georgia Regional Commission in 2007. Since this plan was very comprehensive and completed relatively recently, it served as a basis for the bicycle and pedestrian analysis used in this plan. The focus of the Bicycle and Pedestrian Facilities Plan was:

- Establishing a plan for future bicycle and pedestrian facilities
- Providing viable transportation alternatives to automobile travel to enhance mobility, and improve traffic congestion and air quality
- Increasing the number of school-age children who walk or ride a bike to school

The presence of the bicycle facilities may produce intangible economic benefits, such as:

- Enhancement of property values along areas that feature the bike paths and trails.
- Reduced health care costs resulting from increased opportunities for healthful exercise, and improved quality of life.
- Less damage to roads and preservation of the highway infrastructure resulting from wider paved shoulders.
- Improved mobility for short trips.
- Improved air quality.
- Improved access and circulation within downtown areas.

Parking for automobiles is a constant problem in downtown areas, along with the congestion and pollution that they bring. Increasing the use of bicycling and walking transportation to the downtown areas from outlying residential areas would not only reduce the existing problems associated with the automobile, but would greatly enhance the safety and pleasure of the downtown visitor.

Public comment received at plan involvement meetings and from the Transportation Issues Survey was very supportive of additional bicycle and pedestrian facilities.

5.3.1 Existing Conditions

State Bike System Routes

There are two statewide bike routes that cross into the study area. The first route is **#15 - Central Route Corridor** that begins in Cobb County at Georgia 243 and terminates in Echols County and the Florida border on U.S. 41. Route #15 enters the study area from Highway 41 in Bibb County, and crosses through Houston County and the City of Perry. It leaves the City of Perry south of the Ag Center, and enters a rural area with little traffic until it reaches the Dooly County line.

The second State Bike System Route that comes through the study area is **#40 -TransGeorgia Corridor**. Route #40 begins in the western portion of the State in Harris County on Georgia Highway 315. After passing through Harris, Muscogee, and Talbot Counties, it enters the Middle Georgia region on Georgia Highway 96 in Crawford County. It continues eastward on Georgia Highway 96 through Crawford, Peach, Houston, and Twiggs Counties until the Georgia Highway 96 intersection with Georgia Highway 358. For approximately 6.4 miles, it follows

Georgia Highway 358 until it intersects with U.S. 80 in southeastern Twiggs County. It maintains its path on U.S. 80 through Wilkinson County into Laurens County. Route #40 ends at Bull Street in Savannah. The newer sections of Georgia Highway 96 through Houston County are being designed with bike lanes.

Houston County Routes

Phase I of the greenway along Bay Gall Creek, called the Wellston Trail, in the City of Warner Robins is open and includes a shared-use path for use by bicyclists and pedestrians. Phase I; a mile long section of the trail, has been open for several years. An additional three phases have yet to be completed. The Wellston Trail will eventually be approximately 5 miles in length.

Through the use of transportation improvement initiatives funded by the Special Purpose Local Option Sales Tax (SPLOST) in Houston County, approximately 25 miles of sidewalks have either been constructed or are planned to serve both existing and future populations. Most road widening projects include sidewalks. It is hoped that future initiatives such as these can be used to expand the sidewalk network in Peach and Houston Counties and to establish new networks in the growing areas of the region. The use of the Special Purpose Local Option Sales Tax is also an excellent source of funds to implement bicycle transportation improvements in the areas that currently have or are projected to have higher population densities and activity centers.

Bicycle Crash Statistics

Bicycle related fatal crashes for the period 2009 to 2013 are shown in Table 5.3 below. Data for Peach County are countywide, not just the portion within the WRATS study area. There were two fatalities from bicycle crashes during this period, one each in Houston and Peach Counties. As can be seen from the fatal crash rates per 100,000 population in the table, Houston and Peach Counties generally have much lower fatal bicycle crash rates than Georgia overall except in those years when they experienced a bicyclist fatality. This is because bicycle fatalities are comparatively rare.

Table 5.3: Bicycle Fatal Crash Data for Houston and Peach Counties 2009 – 2013

	Year					Fatalaties Per 100K Population				
County	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Houston	0	0	1	0	0	0.00	0.00	0.69	0.00	0.00
Peach	1	0	0	0	0	3.64	0.00	0.00	0.00	0.00
GA	21	18	14	17	28	0.22	0.22	0.21	0.21	0.21

Source: National Highway Traffic Safety Administration (NHTSA)

Laws Regarding Bicycle and Pedestrian Safety

The National Highway Traffic Safety Administration recently produced a document entitled, "Resource Guide on Laws Related to Pedestrian and Bicycle Safety." The document is intended to be a comprehensive list of traffic and vehicle laws by state, and an assessment of possible impact on pedestrian and bicycle safety. It begins with a recommended Uniform Vehicle Code (UVC) and shows whether the state has an exact, equivalent or variation to that UVC, or if that state has no such code related to that subject. The next segment is a listing of existing vehicular ordinances on various traffic-related subjects from a number of states. Like the UVC, it presents whether the other states have an exact, equivalent variation or no match to that particular ordinance. Finally, the Resource Guide includes several model ordinances from which states and local governments can use to create similar ordinances on those subjects. It contains an immense wealth of data that should be reviewed carefully by the State Bicycle and

Pedestrian task forces to determine applications for both the State of Georgia and the respective local governments.

A survey of local law enforcement officials in the Middle Georgia region reveals that most communities use the existing state laws related to bicycle and pedestrian safety. (See 36-60-5, 40-1-1, 40-6-290, and 40-6-299 of the Georgia Code.) The small number of communities in the region that do have local ordinances in place are mostly related to the definition of sidewalks and pedestrian traffic. Because of the lack of demand and limited resources, local enforcement agencies have either eliminated or severely reduced bicycle/pedestrian safety programs.

The Quality Core Curriculum for Georgia public schools identifies that Kindergarten through 4th grade students are required to be taught basic street and highway safety and bicycle safety. The Bicycle and Pedestrian Facilities Plan supports development of a Safe Routes to School Program for the Warner Robins region. USDOT and GDOT have been very supportive of these programs as a way to increase walking and biking among school age children and to foster community awareness of the benefits this offers in terms of long term health and quality of life.

In an effort to alert drivers when they run off the road, the Georgia DOT is installing shoulder rumble strips (SRS) on new and reconstruction projects. These rumble strips are a great concern to bicyclists because it is a safety hazard, and it is seen as discouragement to bicycle travel. The bicycle community has requested that SRS should only be used as a last resort, and if and when warranted, SRS should only be placed at the locations of historical ROR crashes and meet AASHTO's guidelines.

The WRATS MPO staff undertakes a program to reduce accidents, injuries and fatalities for all modes consistent with the State Highway Safety Plan (SHSP). Information on the SHSP and linkages to the WRATS safety program can be found in Appendix F.

Pedestrian Crash Statistics

Pedestrian related fatal crashes for the period 2009 to 2013 are shown in Table 5.4 below. Data for Peach County are countywide, not just the portion within the WRATS study area. During this period there were nine reported pedestrian fatal crashes in Houston County and one in Peach County. As can be seen in the pedestrian fatality rates per 100,000 population, the pedestrian fatality rates for Houston and Peach Counties are lower than the statewide average for Georgia with the exception of 2012.

Sidewalks and Walkability

The Bicycle and Pedestrian Facilities Plan notes that there is a need to develop pedestrian facilities in proximity to schools, parks, activity centers, and in areas that currently have high levels of pedestrian demand with no sidewalks or discontinuous sidewalks. It notes that inadequate lighting is a significant factor in pedestrian crashes and should be considered in designs for new and improved sidewalks. The plan supports flexible design guidelines for incorporating sidewalks into different area types but with adherence to minimum widths and street buffers. Similarly it supports guidance for shared use paths such that all users have a safe and pleasant travel experience. Many of the Houston County SPLOST projects include sidewalks that connect activity centers and schools. The Warner Robins Region has made great strides in creating a network of arterial sidewalks. It is now possible to walk from the northern portion of Warner Robins nearly to Perry entirely on sidewalks. Planned road projects on Houston Lake Road will soon close this gap. The 2012 Houston County SPLOST includes $2.5 million for downtown Warner Robins streetscape improvements including sidewalks. The Cities of Byron, Centerville, and Perry are all actively extending their sidewalk systems.

Table 5.4: Pedestrian Fatal Crash Data for Houston and Peach Counties 2009 – 2013

	Year					Fatalaties Per 100K Population				
County	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Houston	1	2	2	3	1	0.73	1.42	1.39	2.05	0.68
Peach	0	0	0	1	0	0.00	0.00	0.00	3.63	0.00
GA	152	168	130	167	176	1.58	1.56	1.55	1.53	1.52

Source: National Highway Traffic Safety Administration (NHTSA)

5.3.2 Needs Analysis

The LRTP supports and encourages the implementation of the bicycle and pedestrian facilities as shown in the WRATS Bicycle and Pedestrian Facilities Plan. A map showing the recommendations for pedestrian facilities from this plan is presented in Figure 5.9. Figure 5.10 shows the recommended bicycle facilities from the WRATS Bicycle and Pedestrian Facilities Plan.

Public involvement has shown strong desire for improved bicycle and pedestrian paths in the WRATS area. Both the Stakeholder Interviews and the Transportation Issues Survey response indicate a strong desire for additional pedestrian and bicycle facilities in the region. For this reason, a line item of $900,000 per year has been added to the LRTP for bicycle and pedestrian path enhancements. This totals $36,000,000 over the study period dedicated to this need.

Figure 5.9: Pedestrian Facilities Plan

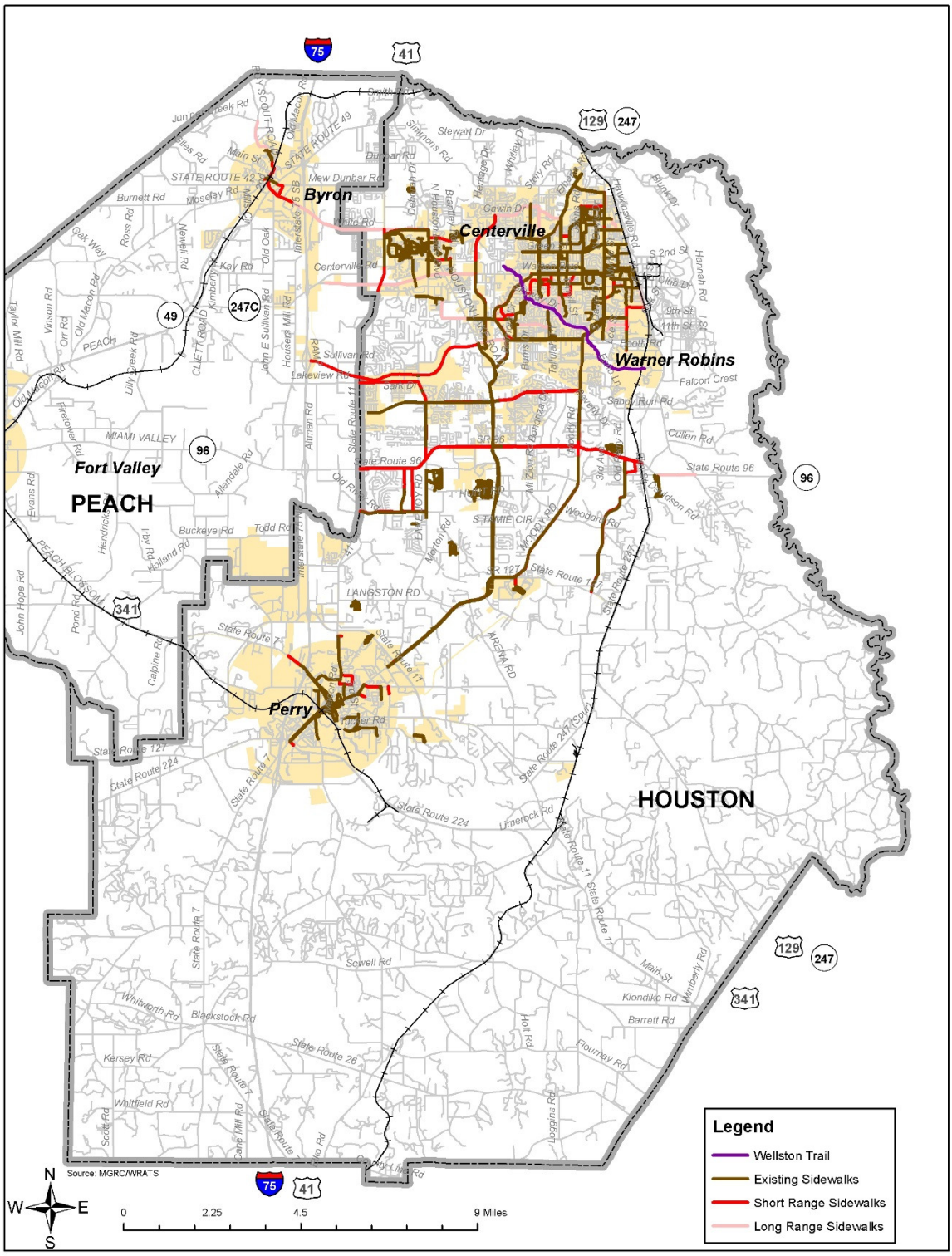
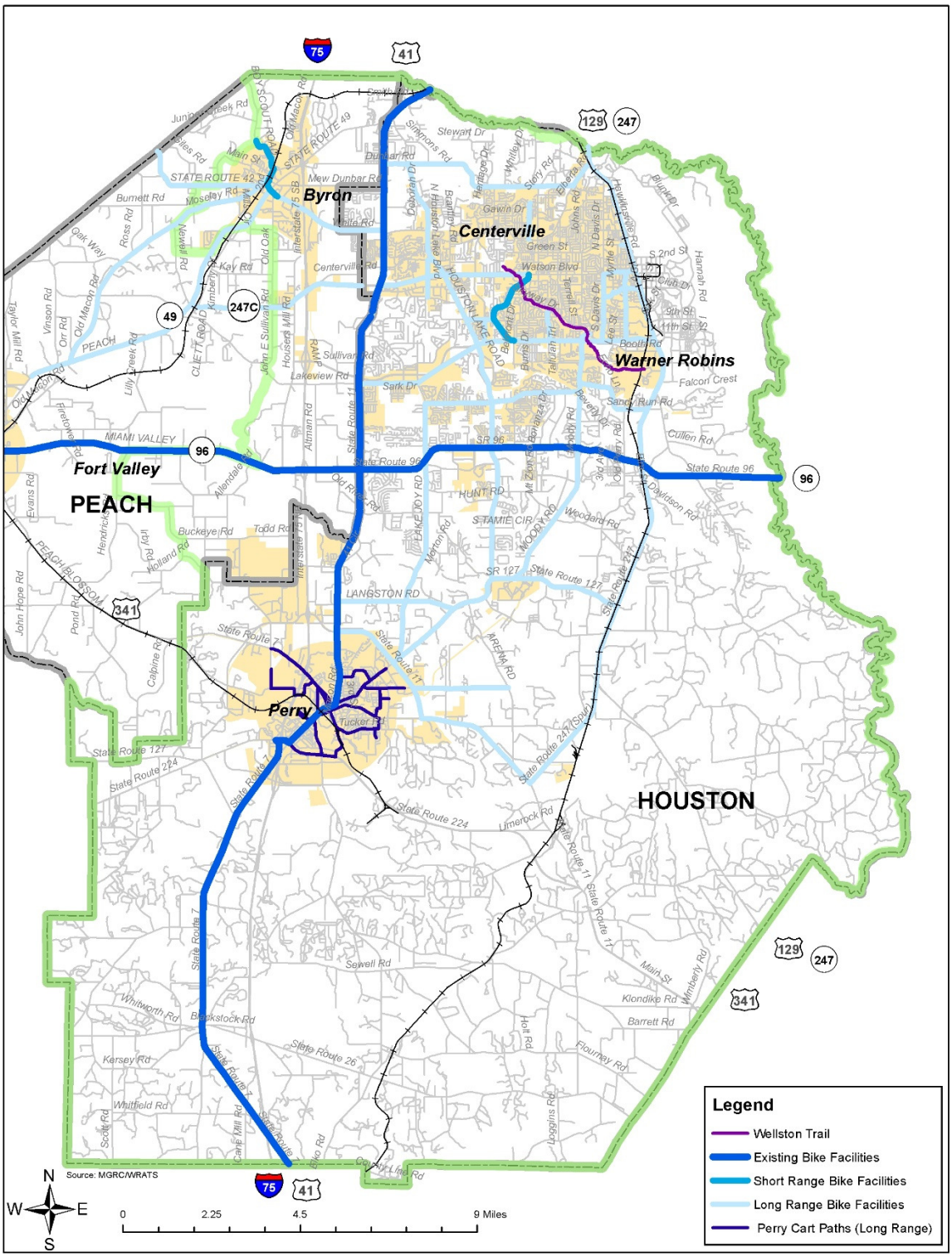


Figure 5.10: Bicycle Facilities Plan



5.4 Other Modes

The WRATS study area includes the Perry-Houston County airport since an MPO boundary change after the 2010 census. The airport is now represented on the MPO Technical Coordinating Committee. . This is a general aviation airport. At this time, there do not appear to be special considerations that should be provided for mobility to and from this area, but it is likely that this airport will grow and gain additional commercial and light industrial development as the region expands.

The Middle Georgia Regional Airport is in Bibb County just north of the study area along SR 247. In 2014 there were 1,837 enplanements at Middle Georgia Regional Airport. Although there are no commercial airlines operating from this airport currently there has periodically been passenger airline service. Commercial airlines at this location have a difficult time competing with passenger air travel at Atlanta's Hartsfield Jackson (ATL) Airport due to its proximity and the numerous air carriers and destinations served directly. This airport does serve many businesses in the area including those that work directly with Robins AFB. Consideration for travel along SR 247 should be given to aid in travel to and from the airport.

5.5 Freight and Goods Movement

5.5.1 Existing Conditions

Currently, the WRATS area has major industrial facilities located along SR 247 east of Perry. A Frito-Lay plant and a Perdue chicken processing facility both are major regional employers in the area with upwards of 10,000 employees at both facilities. There are recently announced plans for a $105 million expansion at the Frito-Lay plant which will add to the number of trucks traveling along SR 247. Since the area has major industrial development and because of the regional employment they provide in the area, it is necessary to ensure that adequate roads exist providing for freight and goods movement to this portion of the study area.

There is an industrial center along SR 49 near the Middle Georgia Regional Airport in Bibb County just to the north of the WRATS study area. Truck trips from this area create part of the need for improvements on SR 49 from I-75 to SR 11 within the WRATS study area.

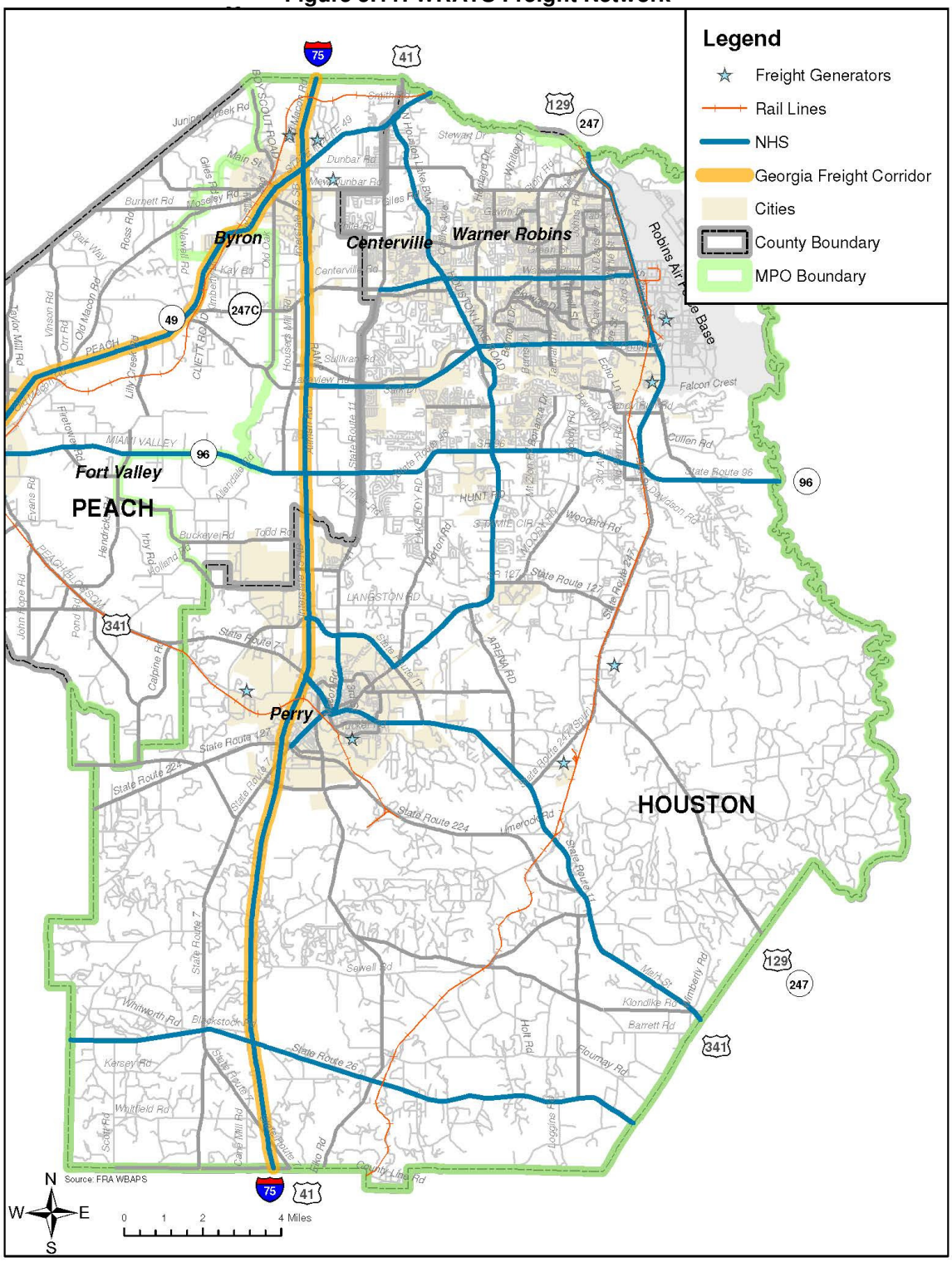
In the northeast portion of Houston County and inside the Warner Robins City Limits, there is a railroad that parallels SR 247. Currently, most roads that cross the railroad do so with at-grade crossings. These crossings present obvious safety issues. Consideration should be given to implementing additional grade separated railroad crossings, consolidating or eliminating at-grade railroad crossings as part of future road projects, and improving safety of at-grade rail crossings with identified safety problems. Figure 5.11 shows the WRATS Freight Network and includes the location of major regional freight generators.

5.5.2 Needs Analysis

Existing and projected traffic volumes show good roadway level of service for SR 247 south of SR 96. Since the volumes on this road will continue to grow at a rapid rate and due to the presence of larger than average volumes of truck traffic, the potential need to widen this roadway should be monitored. Completion of the widening of SR 96 may draw additional truck traffic to that route as an access to I-75 and I-16, and likely truck freight related businesses. Additionally, the network connecting SR 247 in this portion of the study area to I-75 was reviewed. New roadways should be considered to allow for a continuous east-west connection in this portion of Houston County and establishing improved travel from SR 247 to I-75.

Consideration should be given to the construction of a bridge over the railroad, or grade separation, providing improved access to SR 247 in northeast Houston County. This connection should occur at a major roadway allowing for regional travel ensuring the greatest impact for this safety and capacity improvement.

Figure 5.11: WRATS Freight Network



5.6 Operations and Maintenance

5.6.1 Existing Conditions

Existing levels of operation and maintenance expenditures have been adequate to keep pace with growth in the WRATS area. Current local government annual spending on operations and maintenance is shown in Table 5.5. Stakeholder interviews, public comment at meetings, and the Transportation Issues Survey generally note that operations and maintenance are viewed as areas where the current transportation network performs well with only limited exceptions.

Table 5.5: Annual Operations and Maintenance Spending by Jurisdiction

Local Government	O&M Spending (2009 - 2013)
Peach County (part)	$0.9 Million
City of Byron	$1.0 Million
Houston County	$22.7 Million
City of Centerville	$1.0 Million
City of Perry	$8.2Million
City of Warner Robins	$19.6 Million
TOTAL	**$53.4Million**
Average Per Year	**$10.7Million**

Source: Georgia DCA Annual Report of Local Government Finance

5.6.2 Needs Analysis

Current levels of Operations and Maintenance expenditures should be continued. The plan assumes approximately $250 Million over the study period (from 2016 through 2040). This level of expenditure should ensure that the regions roads and bridges are well maintained and operate effectively. A number of the strategies developed in Section 2 of the LRTP will assist with and guide operations and maintenance expenditures. These include:

- Monitor transportation systems operations by identifying/collecting data to ensure efficiency and effectiveness.
- Promote operational strategies and ITS measures that resolve congestion before adding new capacity.

6 Transportation Plan Funding

6.1 Estimated Costs

Once all improvement projects were identified, a cost was estimated for the engineering, right-of-way, and construction for each project. The transportation needs for the WRATS are shown in Table 6.1. Certain expenditure estimates are programmatic in that they reflect a desire to allow for project expenditures within a category of project or activity rather than a specific project. A number of these expenditure categories reflect policies of the WRATS LRTP to encourage funding of these types of projects – for instance setting aside a projected amount of funding in support of the bicycle and pedestrian element of the LRTP. The 2040 LRTP is the first to incorporate an expenditure category for transit. This is based on the public comment received in favor of starting a transit system during the 2012 Warner Robins Transit Feasibility Study and as part of the 2040 LRTP public involvement process. The combined state and local operations and maintenance expenditure categories were set to keep the percentage of total expenditure for this category approximately the same as current levels.

Costs for all Road and Bridge Projects were estimated using the GDOT CEST software to estimate project construction cost in 2010 dollars and then inflated to reflect 2015 project costs. Construction costs were then factored to estimate PE, right-of-way, and utility relocation costs associated with the project. Project costs were then inflated to year of expenditure for mid-term and long term projects using a projected annual inflation rate of 3.18%. No inflation was applied to short-range projects that are currently in the 2015 – 2018 TIP, because TIP projects should already account for year of expenditure costs. In addition, project phase costs for projects in the TIP reflect estimates that are more refined than those for projects in the last 20 years of the plan. Projects in the mid-term and long-term were inflated to the mid-year of these periods (2025 for mid-term projects and 2035 for long-term projects) consistent with GDOT guidance. In addition, after projects were inflated to the year of expenditure they were further increased by 15% to reflect allowance for project cost contingencies.

Table 6.1: Estimated Cost of Transportation Needs in the WRATS Area

	Funding Needed (in year 2015 $000s)
Roads and Bridges	$798,443
ITS/TSM/TDM and Intersection Projects	$101,957
Public Transportation	$72,000
Bicycle and Pedestrian	$36,000
Freight and Goods Movement	Included in Roads & Bridges Above
Operations and Maintenance (local)	$107,810
Operations and Maintenance (state)	$143,145
TOTAL	**$1,259,356**

Table 6.2: Financially Constrained LRTP Road and Bridge Projects

Map Number	Project Number	Route	From	To	Project Description	County	Time Period	PE YOE	ROW & Utility YOE	CST YOE	PE Cost ($)	ROW & Utility Cost ($)	CST Cost ($)	Total Cost ($)
1	0011685	SR247	@Big Indian Creek &Overflow 9 mi SE of Perry		Bridge Replacement	Houston	ST	2013	2016	2017	$0	$174,000	$6,521,000	$6,695,000
2	322460	SR96	Old Hawkinsville/ Thompson Mill Road	SR87/(Twiggs)	Widening	Houston	ST	2009	2011	2016-2020	$0	$6,124,304	$14,743,696	$20,868,000
3	0013553	SR49	SR49 Byron/Peach County	US-41/Houston County	Widening	Both	ST	2016-2020	2016-2020	2016-2020	$1,626,560	$5,489,640	$13,215,800	$20,332,000
4	0013244	West Perry Bypass	CR100/SW Perry Bypass	CR106/Perry Parkway	New 4 lane	Houston	ST	2016-2020	2016-2020	2016-2020	$1,104,577	$3,727,946	$8,974,685	$13,807,207
5		Houston Lake Road	Thomson Road	SR11/SR49/US41	Widening	Houston	ST	2016-2020	2016-2020	2016-2020	$1,305,052	$4,404,552	$10,603,551	$16,313,156
38	SPLOST	Lake Joy Road	Sandefur Road	SR127	TSM/TDM/ITS	Houston	ST	2016-2020	2016-2020	2016-2020	$650,560	$2,195,640	$5,285,800	$8,132,000
39	SPLOST	Gunn Road	County Line	Margie Drive	TSM/TDM/ITS	Houston	ST	2016-2020	2016-2020	2016-2020	$456,000	$1,539,000	$3,705,000	$5,700,000
40	SPLOST	Moss Oaks Road	Industrial Drive	Marshallville Road	Pave/Realign	Houston	ST	2016-2020	2016-2020	2016-2020	$224,000	$756,000	$1,820,000	$2,800,000
41	SPLOST	Elberta Road	North Houston Road	SR247/US129	TSM/TDM/ITS	Houston	ST	2016-2020	2016-2020	2016-2020	$616,000	$2,079,000	$5,005,000	$7,700,000
47		SR127	West of King's Chapel Road	North Perry Bypass	TSM/TDM/ITS	Houston	ST	2016-2020	2016-2020	2016-2020	$660,863	$2,230,414	$5,369,514	$8,260,791
6	0000405	SR7/US341	SR96 (Peach Co.)	Existing 4 lane SR7/US341 (Houston Co.)	Widening	Both	MT	2021-2030	2021-2030	2021-2030	$2,244,039	$7,573,632	$18,232,817	$28,050,487
7	0013313	SR247/US129	SR247C/Watson Blvd. (Houston Co.)	SR11/US41 (Bibb Co.)	Widening	Houston	MT	2021-2030	2021-2030	2021-2030	$2,947,768	$9,948,716	$23,950,613	$36,847,096
8	0013305	SR247C/Watson Blvd.	SR11/US41	SR247/US129	Widening/Median	Houston	MT	2021-2030	2021-2030	2021-2030	$5,997,174	$20,240,461	$48,727,037	$74,964,672
9	0008387	SR96	Fire Tower Road	Housers Mill Road	Widening	Peach	MT	2021-2030	2021-2030	2021-2030	$782,673	$2,641,520	$6,359,216	$9,783,409
10	363765	Russell Parkway Extension	Housers Mill Road	Lakeview Road	New 2 lane	Peach	MT	2021-2030	2021-2030	2021-2030	$589,205	$1,988,566	$4,787,289	$7,365,060
11		Dunbar Road	Houston Lake Rd.	Centerville/Elberta Rd.	Widening	Houston	MT	2021-2030	2021-2030	2021-2030	$4,435,515	$14,969,864	$36,038,561	$55,443,940
12		SR247C/Watson Boulevard	I-75	SR11/US41	Widening	Both	MT	2021-2030	2021-2030	2021-2030	$2,433,256	$8,212,239	$19,770,206	$30,415,701
13		Elberta Road	Houston Road	Carl Vinson Parkway	Widening	Houston	MT	2021-2030	2021-2030	2021-2030	$1,372,903	$4,633,548	$11,154,837	$17,161,288
14		White Road	SR49	SR11/US41	Widening	Both	MT	2021-2030	2021-2030	2021-2030	$3,284,438	$11,084,979	$26,686,060	$41,055,476
42		White Road	SR42/SR49	Linda Dr.	Realignment/New 2 lane	Peach	MT	2021-2030	2021-2030	2021-2030	$769,403	$2,596,734	$6,251,397	$9,617,534
43		SR49	Pine Ridge Drive	I-75 Ramps	Median	Peach	MT	2021-2030	2021-2030	2021-2030	$860,102	$2,902,845	$6,988,331	$10,751,278
44		North Davis Dr.	Watson Blvd.	Bargain Rd.	Add Turn Lanes	Houston	MT	2021-2030	2021-2030	2021-2030	$305,501	$1,031,066	$2,482,196	$3,818,763
45		Pleasant Hill Rd.	Watson Blvd.	Booth Rd.	Median	Houston	MT	2021-2030	2021-2030	2021-2030	$651,722	$2,199,563	$5,295,244	$8,146,529
46		Sandy Run Rd.	Moody Rd.	SR247@Hawkinsville Dr.	Add Turn Lanes	Houston	MT	2021-2030	2021-2030	2021-2030	$633,304	$2,137,400	$5,145,592	$7,916,296
15		SR11/US341	Arena Rd.	Grovania Rd.	Widening	Houston	LT	2031-2040	2031-2040	2031-2040	$3,074,707	$10,377,137	$24,981,996	$38,433,841
16		SR11/US41	SR 49	Russell Pkwy.	Widening	Both	LT	2031-2040	2031-2040	2031-2040	$8,443,893	$28,498,139	$68,606,632	$105,548,665
17		I-75	Sardis Church Road (Bibb Co)	SR247C/Watson Blvd.	Widening	Peach	LT	2031-2040	2031-2040	2031-2040	$11,743,224	$39,633,381	$95,413,695	$146,790,300
18		South Davis Drive Extension	Russell Pkwy.	Sandy Run Road	New 3 lane	Houston	LT	2031-2040	2031-2040	2031-2040	$2,999,901	$10,124,664	$24,374,192	$37,498,757
19		Limerock Rd/Boutwell Rd	SR-224/Golden Isles Pkwy	SR11/US341	Widening	Houston	LT	2031-2040	2031-2040	2031-2040	$1,458,083	$4,921,031	$11,846,927	$18,226,041

Note: Project phase amounts shown in red were programmed outside the timeframe of the LRTP

6.2 Available Funding

Once the costs of the transportation improvements outlined for the study area were identified, the anticipated level of funding for projects in the WRATS area was determined. Historical and anticipated funding figures for federal and state funds coming to the WRATS area were provided by GDOT. GDOT indicated that these figures should not be used as a rule but rather a guide to assist in the LRTP update. GDOT also provided estimated future federal and state revenues bases on a 1% growth projection and a 2% growth projects but again only as a guide for planning purposes. Projected funding used for the 2040 LRTP assumes that the current growth in the level of funding provided to the area remains constant at approximately 2.0% per year.

Using the guidance figures provided by GDOT, estimates of local Special Purpose Local Option Sales Tax (SPLOST) funding, and estimates of other local funding for transportation; funding for the 2040 LRTP is anticipated to be a total of $1,261 million, which includes $703 million of Federal and State funds, exclusive of set asides for maintenance and operations, and $558 million in local transportation funds including SPLOST, over the 25 years of the plan. Estimated SPLOST funding is based on projecting annual transportation funding in the current 2012 Houston County SPLOST.

Table 6.3 shows the total expected available resources for transportation purposes within the WRATS Study area from 2016 – 2040. It was projected that local transportation funds, including SPLOST funds, will grow by the same 2.0% per year on average as used for projecting federal and state transportation funds.

Table 6.3: Estimated Transportation Funding Available to WRATS over the 2040 LRTP Planning Horizon (in 2015 $ Millions)

Time Period	Federal and State Funds (Planning, Right of Way, and Construction)	Federal and State Funds (Maintenance)	Total Federal and State Funds	Local Funds	**Total Transportation Funding**
Short Term 2016 - 2020	$91.0	$23.3	$114.3	$86.7	$201.0
Mid-Term 2021 - 2030	$211.4	$54.0	$265.5	$212.3	$477.7
Long Term 2031 - 2040	$257.7	$65.9	$323.6	$258.8	$582.4
Total	**$560.2**	**$143.1**	**$703.3**	**$557.8**	**$1,261.1**

Table 6.4 shows additional detail for the projected revenues by time period shown in Table 6.3

Table 6.4: Estimated Transportation Funding by Year ($ millions)

Year	Federal and State Funds (Planning, Rightof Way, and Construction	Federal and State Funds (Maintenance)	Total Federal and State Funds	Local Funds (SPLOST)	Local Funds (Other)	Total Local Funds	Total Transportation Funding
2016	$17.5	$4.5	$22.0	$7.0	$8.3	$15.3	**$37.3**
2017	$17.8	$4.6	$22.4	$7.0	$8.5	$15.5	**$37.9**
2018	$18.2	$4.6	$22.8	$9.6	$8.7	$18.3	**$41.1**
2019	$18.6	$4.7	$23.3	$9.8	$8.8	$18.6	**$41.9**
2020	$18.9	$4.8	$23.8	$10.0	$9.0	$19.0	**$42.8**
2021	$19.3	$4.9	$24.2	$10.2	$9.2	$19.4	**$43.6**
2022	$19.7	$5.0	$24.7	$10.4	$9.4	$19.8	**$44.5**
2023	$20.1	$5.1	$25.2	$10.6	$9.6	$20.2	**$45.4**
2024	$20.5	$5.2	$25.7	$10.8	$9.8	$20.6	**$46.3**
2025	$20.9	$5.3	$26.2	$11.0	$10.0	$21.0	**$47.2**
2026	$21.3	$5.4	$26.8	$11.2	$10.2	$21.4	**$48.2**
2027	$21.7	$5.6	$27.3	$11.5	$10.4	$21.8	**$49.1**
2028	$22.2	$5.7	$27.8	$11.7	$10.6	$22.3	**$50.1**
2029	$22.6	$5.8	$28.4	$11.9	$10.8	$22.7	**$51.1**
2030	$23.1	$5.9	$29.0	$12.2	$11.0	$23.2	**$52.1**
2031	$23.5	$6.0	$29.6	$12.4	$11.2	$23.6	**$53.2**
2032	$24.0	$6.1	$30.1	$12.7	$11.4	$24.1	**$54.2**
2033	$24.5	$6.3	$30.7	$12.9	$11.7	$24.6	**$55.3**
2034	$25.0	$6.4	$31.4	$13.2	$11.9	$25.1	**$56.4**
2035	$25.5	$6.5	$32.0	$13.4	$12.1	$25.6	**$57.6**
2036	$26.0	$6.6	$32.6	$13.7	$12.4	$26.1	**$58.7**
2037	$26.5	$6.8	$33.3	$14.0	$12.6	$26.6	**$59.9**
2038	$27.0	$6.9	$33.9	$14.3	$12.9	$27.1	**$61.1**
2039	$27.6	$7.0	$34.6	$14.5	$13.1	$27.7	**$62.3**
2040	$28.1	$7.2	$35.3	$14.8	$13.4	$28.2	**$63.6**
Total	**$560.2**	**$143.1**	**$703.3**	**$290.7**	**$267.1**	**$557.8**	**$1,261.1**

6.3 Financial Constraint

As can be seen by comparing the total cost of transportation needs identified in the 2040 WRATS LRTP, in Table 6.1 ($1.26 billion), with estimated transportation funding over the LRTP planning horizon, in Table 6.3 ($1.26 billion), expenditures do not exceed anticipated resources so the plan is financially constrained.

7 Plan Recommendations

The 2040 WRATS LRTP recommends the Goals, Objectives, Performance Measures, and Strategies in Section 2 of the plan. The Goals and Objectives constitute overall policies for the LRTP. The performance measures are metrics that enable the effectiveness of policies to be tracked and evaluated over time at a systems level consistent with the MAP-21 performance based planning and programming approach. The Strategies are specific actions to be undertaken to help implement the goals and objectives of the plan.

The 2040 WRATS LRTP also recommends programs and projects. Programmatic funding is used when specific projects within a category are not identified or not identified to the extent of the funding set aside for an expenditure category. For example, although transportation funds are recommended to be set aside for beginning a transit system no specific transit system has been approved and discussion among local jurisdictions as to how best to implement transit service, who should operate the system, and the specifics of a transit system have yet to be determined. The LRTP uses the 2012 WRATS Transit Feasibility Study recommended transit system as a basis for determining the amount to be set aside for transit service.

Most project recommendations are for road and bridge projects. Although there are road and bridge projects recommended that are ITS/TSM/TDM and intersection projects, these projects were put forward by GDOT or local jurisdictions and were not the result of technical analysis conducted specifically for the LRTP. The technical analysis conducted for the LRTP focused primarily on identifying and evaluating new road and bridge or roadway capacity projects.

7.1 Transit

The LRTP recommends beginning a public transit service consistent with the one discussed in Section 5.2. Public comment on the LRTP identifies this as a primary transportation need. Public transit would provide a needed mobility option for the transportation disadvantaged community and help to ensure access to essential services; which are both objectives of the LRTP. The LRTP recommends that $72 million in transportation funds be set aside for implementation of a public transit system. This is the first WRATS LRTP to recommend implementation of public transit and a specific funding level.

7.2 Bicycle and Pedestrian Systems

The LRTP recommends continuing to develop the bicycle and pedestrian system outlined in the WRATS 2007 Bicycle and Pedestrian Plan as described in Section 5.3. As with transit, public comment identified pedestrian and bicycle facilities as a primary transportation need. Sidewalks, multi-use trails, and bike lanes provide an inexpensive and environmentally friendly alternative to private automobiles that provide mobility and enhance the regions quality of life. The LRTP recommends that $36 million in transportation funds be set aside for implementation of pedestrian and bicycle projects, either as stand-alone projects or in conjunction with road and bridge projects.

7.3 ITS/TSM/TDM and Intersection Projects

The LRTP recommends approximately $102 million in funding for ITS/TSM/TDM and intersection projects over the 25 year course of the plan. These projects enable roads to operate more efficiently than they otherwise would and may be a substitute for road capacity projects or enable a road capacity project to be deferred. Some ITS/TSM/TDM and intersection projects are included in the recommended Road and Bridge Projects. Many of the Houston County SPLOST projects are to install center left turn lanes or other dedicated turn lanes that improve roadway LOS by

improving traffic flow on through lanes. ITS/TSM/TDM and Intersection projects assist in maintaining the economic vitality of the region and in preserving the operational efficiency of the existing transportation road network.

7.4 Maintenance and Operations

The LRTP recommends funding of approximately $250 million for maintenance and operations over the span of the plan. This is a category of programmatic expenditure that allows projects to be identified later. This level of expenditure is consistent with the current level of expenditure for transportation maintenance and operations which has resulted in good levels of pavement and bridge condition, and relatively low levels of congestion on the existing road network.

7.5 Road and Bridge Projects

The LRTP recommends a number of specific road and bridge projects. Most of these projects are consistent with those recommended by the 2035 LRTP except for those that were completed since 2010, those that were withdrawn by local jurisdictions, or those that have been listed as illustrative in the plan either because they were not identified as having level of service issues based on travel demand modeling or had only minor issues with future LOS, or because they could not meet financial constraint. Recommended Road and Bridge projects include those that were necessary to maintain adequate LOS for truck travel within and through the region.

Transportation improvements were developed in the modeling process that added necessary capacity to achieve an acceptable level of service for the roads in the WRATS study area. The modeling process includes looking at existing and projected future truck flows. After costs for these improvements were calculated, the projects were categorized into short-range, mid-range and long-range improvements. The cost for each funding period is shown in Table 7.1.

Table 7.1: Total Cost of Road and Bridge Improvement Projects by Short-, Mid- or Long-Range In Year 2015 ($000s)

	Short-Range	Mid-Range	Long-Range	Total
ROW (000's)	$28,720	$92,161	$93,554	$214,436
Engineering (000's)	$6,644	$27,307	$27,720	$61,670
Construct Cost (000's)	$75,244	$221,869	$225,223	$522,337
Total Cost (000's)	**$110,608**	**$341,338**	**$346,498**	**$798,443**

Note: Project costs include inflation and contingency

7.6 Short Range Projects

Transportation improvements recommended for short range implementation (2016 – 2020) are shown on Figure 7.1 and include:

SR 247 Bridge Replacement @ Big Indian Creek & overflow 9 mi SE of Perry (Project ID – 0011685/Map 1)

Bridge Replacement, 0.80 Miles
Total Cost $6,521,000

SR 96 from Old Hawkinsville/Thompson Mill Rd. to SR 87 (Twiggs) (Project ID – 322460/Map 2)

Widening from 2 to 4 Lanes, 7.80 Miles (2.19 Miles within WRATS Study Area)
Total Cost $20,866,000

SR 49 from Byron to US 41 (Project ID – 0013553/Map 3)

Widen from 2 to 4 lanes, 2.71 Miles
Total Cost - $20,332,000

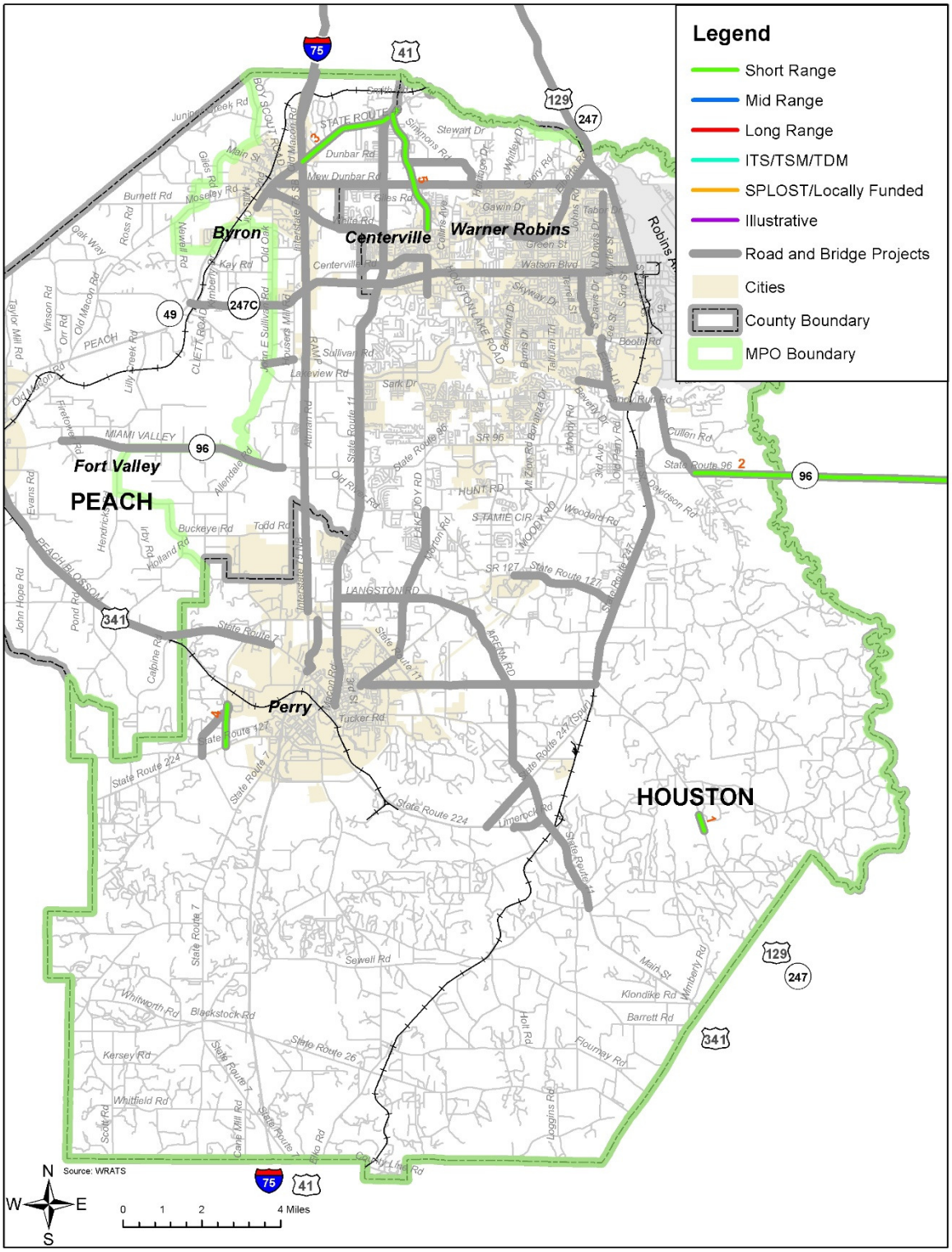
West Perry Bypass from CR100/SW Perry Bypass to CR106/Perry Parkway (Project ID – 0013244/Map 4)

New 4 Lane Road, 1.66 Miles
Total Cost $13,807,000

Houston Lake Rd. from Thomson Rd. to US41 (Project ID – 1/Map 5)

Widening from 2 to 4 Lanes, 3.19 Miles
Total Cost $16,313,000

Figure 7:1 Short Range Road and Bridge Improvements



7.7 Mid-Range Projects

Mid-Range implementation projects are shown on Figure 7.2 and cover the period from 2021 to 2030. These projects include:

SR 7/US341 from SR 96/Peach to 4 lane section in Houston County (Project ID – 0000405/Map 6)

Widen from 2 to 4 lanes, 3.55 Miles (2.30 Miles within WRATS Study Area)
Total Cost - $20,511,000

SR 247/US129 from SR 247C/Watson Blvd. (Houston Co.) to SR 11/US41 (Bibb Co.) (Project ID – 0013313/Map 7)

Widen from 4 to 6 lanes, 7.70 Miles (3.52 Miles within WRATS Study Area)
Total Cost - $26,943,000

SR 247C/Watson Blvd. from SR 11/US41 to SR 247/US129 (Project ID – 0013305/Map 8)

Widening from 4 to 6 lanes 2.45 miles from SR 11/US41 to Carl Vinson Parkway and Add Median from Carl Vinson Parkway to SR 247/US129 4.10 Miles
Total Cost - $54,815,000

SR 96 from Fire Tower Road to Housers Mill Road (Project ID – 0008387/Map 9)

Widen from 2 to 4 lanes, 5.70 Miles (0.65 Miles within WRATS Study Area)
Total Cost - $7,154,000

Russell Parkway Extension from Housers Mill Road to Lakeview Road (Project ID – 363765/Map 10)

New 2 Lane Road, 0.53 Miles
Total Cost - $5,385,000

Dunbar Rd from Houston Lake Rd. to Centerville/Elberta Rd. (Project ID – 2/Map 11)

Widening from 2 to 4 Lanes, 4.50 Miles
Total Cost $40,541,000

SR 247C/Watson Blvd. from I-75 to SR 11/US41 (Project ID – 3/Map 12)

Widen from 4 to 6 lanes, 1.84 miles
Total Cost - $22,240,000

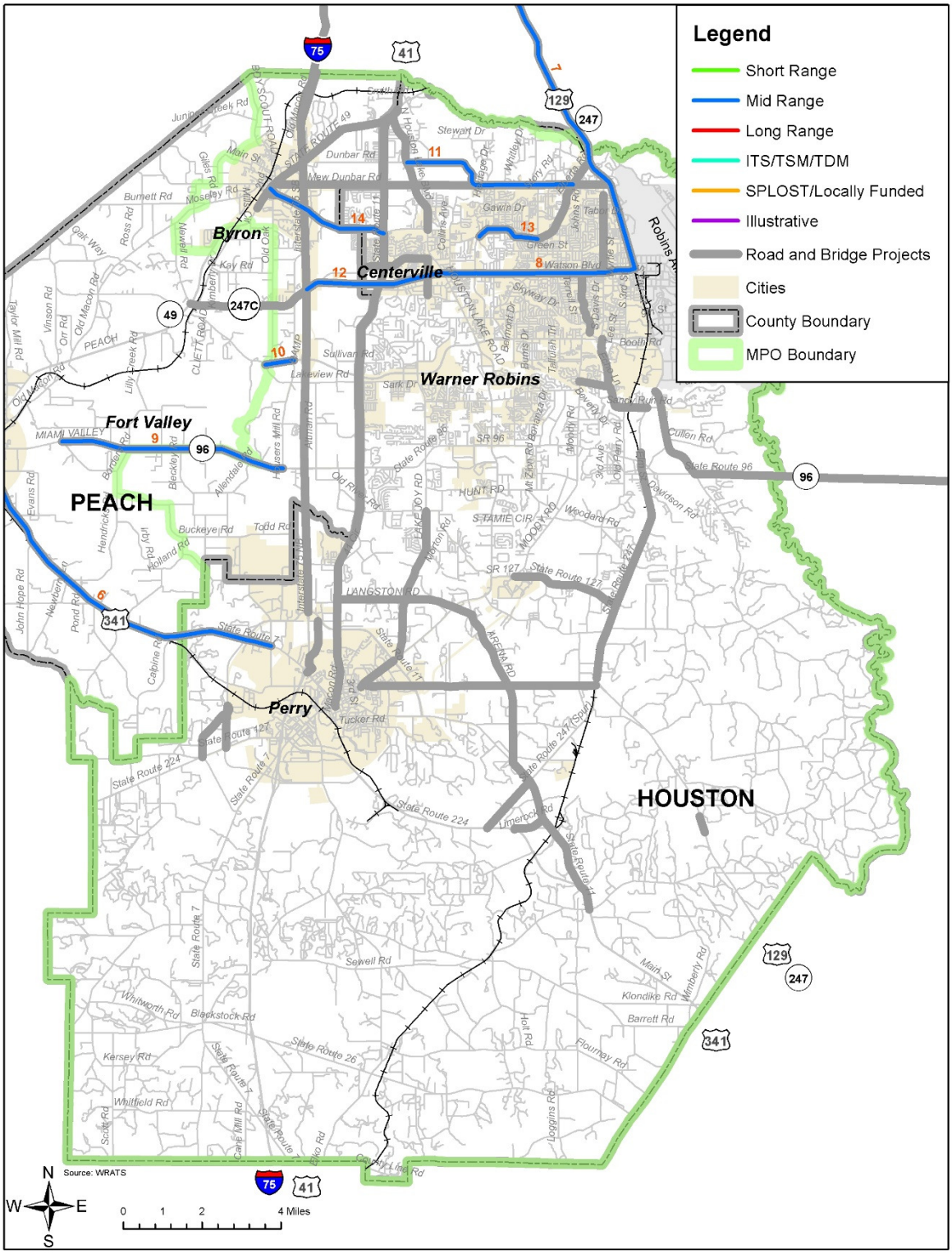
Elberta Rd. from Houston Rd. to Carl Vinson Parkway (Project ID – /Map 13)

Widening from 2 to 4 Lanes, 1.50 Miles
Total Cost $12,549,000

White Rd./Thomson Rd. from SR 49 to SR 11/US41 (Project ID - 4/Map 14)

Widening from 2 to 4 Lanes, 3.20 Miles
Total Cost $30,020,000

Figure 7.2: Mid-Range Road and Bridge Improvements



7.8 Long Range Projects

The remaining projects needed in the WRATS study area in order to achieve an acceptable LOS in 2040 are shown on Figure 7.3 and are planned for 2031 to 2040. These projects include:

SR 11/US341 from Arena Rd. to Grovania Rd. (Project ID – 5/Map 15)

Widening from 2 to 4 Lanes, 3.58 Miles
Total Cost $20,550,000

SR 11/US41 from SR 49 to Russell Parkway (Project ID – 6/Map 16)

Widening from 2 to 4 Lanes, 6.69 Miles
Total Cost $56,434,000

I-75 from Sardis Church Road (Bibb Co.) to Watson Blvd. (Project ID – 7/Map 17)

Widening from 6 to 8 Lanes, 7.30 Miles (5.31 Miles within WRATS Study Area)
Total Cost $78,485,000

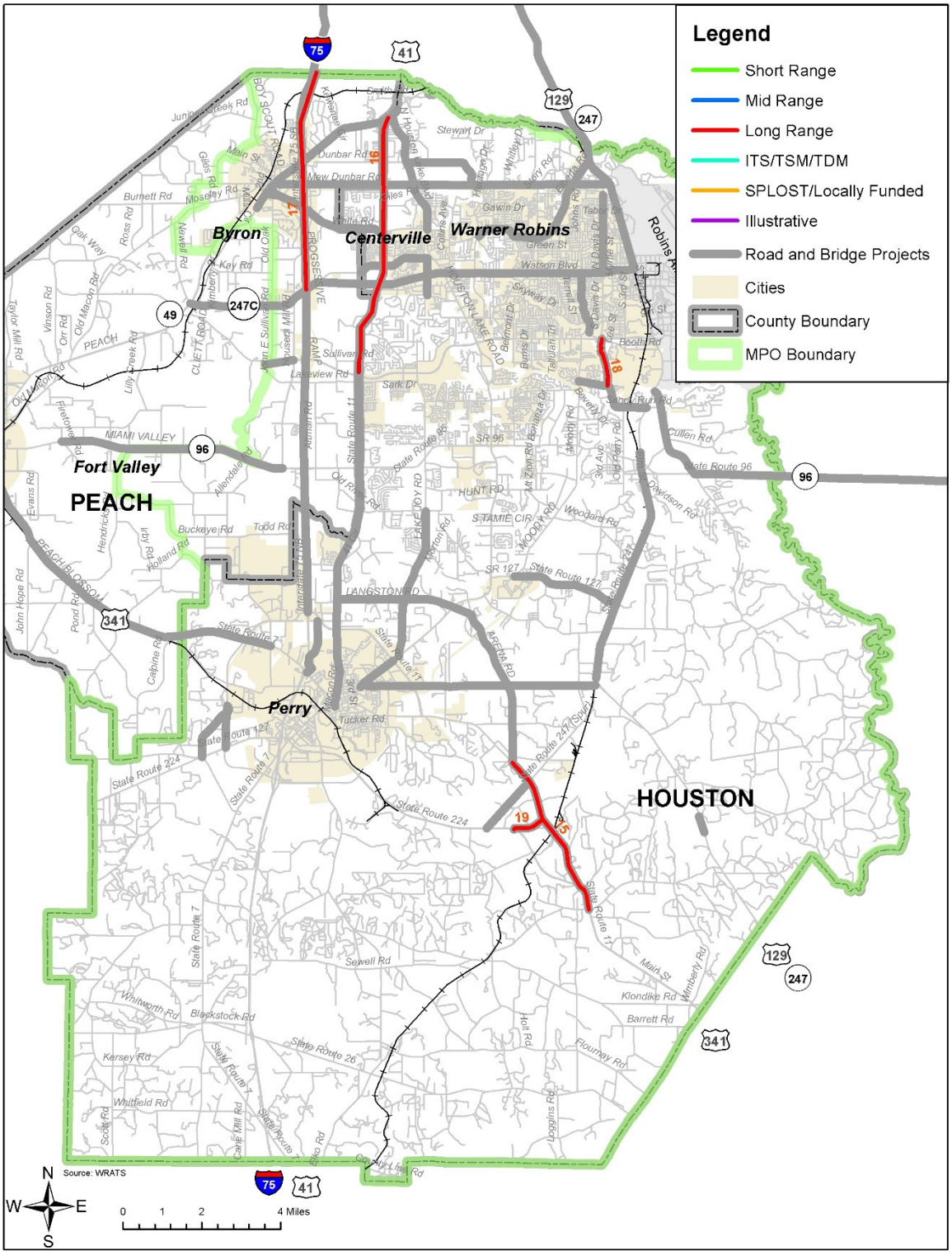
South Davis Dr. Extension from Russell Pkwy. to Sandy Run Rd. (Project ID – 8/Map 18)

New Construction of a 2 Lane Road with center turn lane, 2.11 Miles
Total Cost $20,050,000

Limerock Rd./Boutwell Rd. from SR 224/Golden Isles Parkway to SR 11/US341 (Project ID - 9/Map 19)

Widening from 2 to 4 lanes, 0.76 Miles
Total Cost $9,745,000

Figure 7.3: Long Range Road and Bridge Improvements



7.9 Illustrative Projects

Illustrative projects are those that the region would pursue if additional funding or financial capacity were available. Although not within the financial capacity of the 2040 LRTP they are still important to the region and should be considered in subsequent plans or as amendments to the LRTP if additional funds or financial capacity are identified. These projects include:

Dunbar Extension from US41 to Dunbar Rd. (Project ID - 10/Map 20)

New Construction to 4 Lanes, 1.29 Miles
Total Cost $25,715,000

SR 11/US41 from Russell Pkwy. to Mossy Creek (Project ID - 11/Map 21)

Widening from 2 to 4 Lanes, 4.07 Miles
Total Cost $32,486,000

I-75 from SR 247C/Watson Blvd. to Russell Pkwy. (Project ID - 12/Map 22)

Widening from 6 to 8 Lanes, 1.77 Miles
Total Cost $33,973,000

I-75 from Russell Pkwy. to SR 11/Perry Pkwy. (Project ID - 13/Map 23)

Widening from 6 to 8 Lanes, 5.66 Miles
Total Cost $77,711,000

Dunbar Rd. from SR 49 to SR 11/US41 (Project ID - 14/Map 24)

(includes bridge over I-75 and alignment along New Dunbar Rd.)

New Construction to 4 Lanes, 2.77 Miles
Total Cost $25,715,000

Note: this project is related to a proposed widening of I-75 (Project ID – 7/Map 17) from 6 to 8 lanes

Dunbar Extension from Elberta Road to SR 247 (Project ID - 15/Map 25)

New Construction of 4 Lane Road, 0.94 Miles
Total Cost $20,725,000

Old Hawkinsville Rd. from SR 247 to SR 96 (Project ID - 16/Map 26)

Widening from 2 to 4 Lanes, 2.45 Miles
Total Cost $24,366,000

SR 11/US41 from Mossy Creek to SR 127 (Project ID - 17/Map 27)

Widening from 2 to 4 Lanes, 3.73 Miles
Total Cost $34,169,000

Kings Chapel Rd. from Arena Rd. to SR 247 (Project ID - 18/Map 28)

New Construction of a 2 Lane Road, 2.20 Miles
Total Cost $14,100,000

Langston/Arena Rd. from US41 to US341 (Project ID - 19/Map 29)

Widening from 2 to 4 Lanes, 7.50 Miles
Total Cost $62,779,000

Kings Chapel Rd. from SR 127 to Arena Rd. (Project ID - 20/Map 30)

Widening from 2 to 4 Lanes, 3.74 Miles
Total Cost $34,018,000

St. Patrick's Drive Extension from St. Patrick's Drive to Thompson Rd. (Project ID - 21/Map 31)

New 2 lane road section, 1.10 Miles
Total Cost - $7,901,000

SR 247 Connector from SR 247 Spur to SR 224/Golden Isles Parkway (Project ID - 22/Map 32)

New 2 lane road section, 1.57 Miles
Total Cost - $10,514,000

Chapman/Old Macon Road from Benjamin Hawkins Parkway to Frank Amerson Jr. Parkway (Project ID - 23/Map 33)

New 2 lane road section with center turn lane and bridge over Echeconnee Creek, 1.50 Miles
Total Cost - $19,201,000

Margie Dr. from Smithville Church Rd. to Gunn Rd. (Project ID - 24/Map 34)

Widening from 2 or 3 Lanes to 4 Lanes, 1.01 Miles
Total Cost $14,271,000

SR 247C from SR 49 to I-75 (Project ID – 321660/Map 35)

Widening from 4 to 6 Lanes, 3.00 Miles
Total Cost $33,040,000

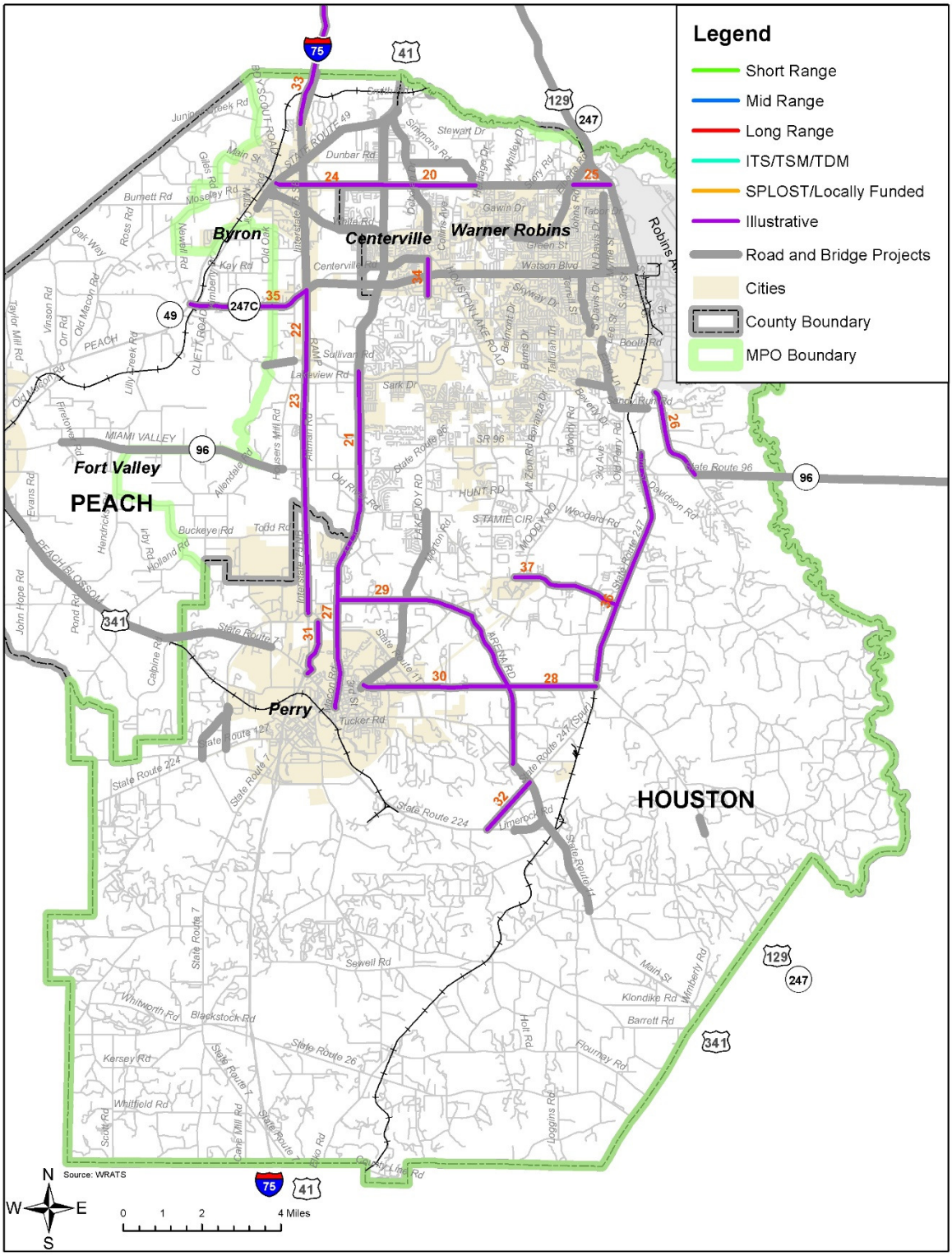
SR 247/US129 from SR 247 Spur to SR 96 (Project ID – 0008583/Map 36)

Widening from 2 to 4 Lanes, 5.89 Miles
Total Cost $53,413,000

SR 127 from SR 247/US129 to Moody Rd. (Project ID - 36/Map 37)

Widening from 2 to 4 Lanes, 2.77 Miles
Total Cost $26,723,000

Figure 7.4: Illustrative Road and Bridge Improvements



7.10 SPLOST/Locally Funded and Intelligent Transportation System/Transportation Systems Management/Travel Demand Management (ITS/TSM/TDM) and Intersection Projects

SPLOST/Locally Funded projects are those near term projects with specific identified local funding. ITS/TSM/TDM and Intersection Projects are identified non-capacity road projects that are intended to improve operations and safety in localized areas. These projects may be funded through some combination of the federal, state and local operations funds identified as a line item in the funding estimates for the LRTP.

Currently identified SPLOST/Locally funded road projects include:

Lake Joy Rd. from Sandefur Rd. to SR 127/South Houston Lake Rd. (Project ID - 25/Map 38)

Widen from 2 to 3 lanes, 2.50 Miles
Total Cost - $8,132,000

Gunn Rd. from County Line to Margie Dr. (Project ID - 26/Map 39)

Widen from 2 to 3 lanes, 1.80 Miles
Total Cost - $5,700,000

Moss Oaks Rd. from Industrial Dr. to Marshallville Rd. (Project ID - 27/Map 40)

Pave and Realign from 2 to 2 lanes, 1.60 Miles
Total Cost - $2,800,000

Elberta Rd. from North Houston Rd. to SR 247/US129 (Project ID - 28/Map 41)

Widen from 2 to 3 lanes, 2.50 Miles
Total Cost - $7,700,000

Identified ITS/TSM/TDM and Intersection projects include:

White Road from SR 42/SR 49 to Linda Dr. (Project ID - /Map 42)

Realignment of intersection/New 2 lane road, 0.29 Miles
Total Cost $7,032,000

SR 49 from Pine Ridge Dr. to I-75 through Byron, GA (Project ID - 29/Map 43)

Adding a Median, 1.60 miles
Total Cost - $7,861,000

North Davis Dr. from Watson Blvd. to Bargain Rd. (Project ID - 30/Map 44)

Adding Turn Lanes, 1.90 Miles
Total Cost $2,792,000

Pleasant Hill Rd. from Watson Blvd. to Booth Rd. (Project ID - 31/Map 45)

Adding a Median, 1.95 Miles
Total Cost $5,957,000

Sandy Run Rd. from Moody Rd. to SR 247 (Project ID - 32/Map 46)

Adding Turn Lanes, 1.80 Miles
Total Cost $5,789,000

SR 127 from West of Kings Chapel Rd. to North Perry Bypass (Project ID - /Map 47)

Adding a Center Turn Lane, 1.16 miles
Total Cost - $8,261,000

Figure 7.5: SPLOST/Locally Funded Road and Bridge Improvements and ITS/TSM/TDM and Intersection Projects